TOSHIBA

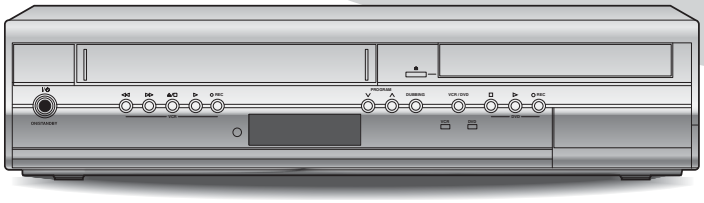
FILE NO. 810-200634GR

REVISED: 01

SERVICE MANUAL

DVD Video Recorder /Video Cassette Recorder

D-VR16SB
D-VR40SF



The above models are classified as green products (*1), as indicated by the underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

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Published in Japan, July, 2006 GREEN

(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

MAIN SECTION

DVD VIDEO RECORDER & VIDEO CASSETTE RECORDER

D-VR16SB/D-VR40SF

Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

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SPECIFICATIONS

General

■ System
DVD-Video, DVD-R/RW, CD-DA, CD-R/RW,
VCD, Video Cassette Tape

■ VCR Video Heads
Four heads

■ Power requirements
220–240V ~ ± 10%, 50Hz ± 0.5%

■ Power consumption
35W (standby: 5.0W)

■ Weight
4.3kg

■ Dimensions (width x height x depth)
435 x 99.5 x 268mm

■ Operating temperature
5ºC to 40ºC

■ Operating humidity
Less than 80% (no condensation)

■ TV format
PAL - I (D-VR16SB)
SECAM LL , PAL B / G (D-VR40SF)

Recording

■ Recording format
Video Recording format (DVD-RW only),
Video format (DVD-RW, DVD-R)

■ Recordable discs
DVD-Rewritable, DVD-Recordable

■ Video recording format
Sampling frequency : 13.5MHz
Compression format : MPEG

■ Audio recording format
Sampling frequency : 48kHz
Compression format : Dolby Digital

Tuner

■ Receivable channels
IRA - E69 (D-VR16SB)

"L(SECAM L)" F1 - E69 (D-VR40SF)
"BG(PAL B / G)" E2 - E69 (D-VR40SF)

Input/Output

Front Panel : (AV3)

■ Video input
One RCA connector
Input level : 1Vp-p (75 Ω)

■ S-Video input
One Mini DIN 4-pin jack
Input level : Y (luminance) 1Vp-p (75 Ω)
C (colour) 300mVp-p (75 Ω)

■ Audio input
Two RCA connectors
Input level : 2Vrms (Input impedance: more than 10kΩ)

Rear Panel :

■ VHF/UHF antenna input/output terminal
VHF/UHF set 75 Ω

■ Audio input /output
Two 21-pin scart jack (AV1, AV2)

■ Video input /output
Two 21-pin scart jack (AV1, AV2)
Input /output level : 1Vp-p (75Ω) each

■ S-Video output
One Mini DIN 4-pin jacks
Input /output level :
Y (luminance) 1Vp-p (75 Ω)
C (colour) 300mVp-p (75 Ω)

■ Component video output
Three RCA connectors
Output level : Y: 1.0Vp-p (75 Ω)
P_B/C_B, P_R/C_R: 0.7Vp-p (75Ω) each

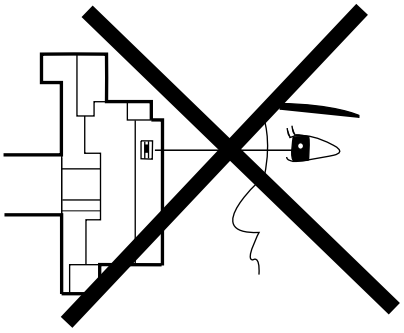
■ Audio input
Two RCA connectors
Output level : 2Vrms (Output impedance: ≃680Ω)

■ Digital audio output
One Coaxial pin jack
Output level : 500mVp-p (75 Ω)

Note
The specifications and design of this product are subject to change without notice.

LASER BEAM SAFETY PRECAUTIONS

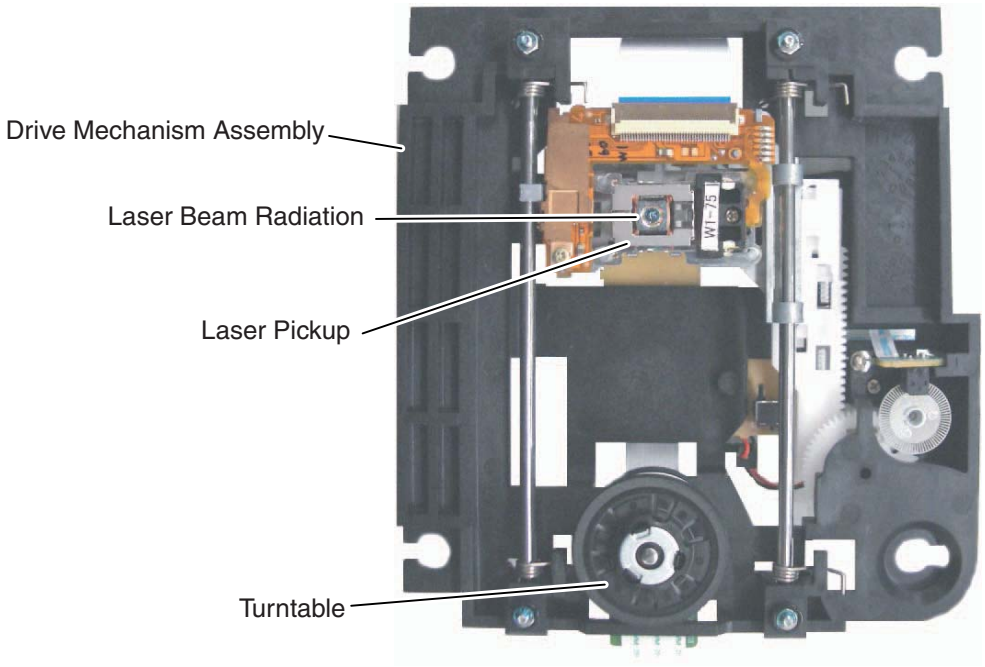
This DVD player uses a pickup that emits a laser beam.

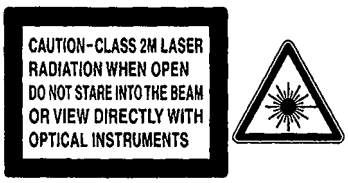


Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.





Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector. (Discard it.)

2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
220 to 240 V	≥ 3 mm(d) ≥ 6 mm(d')

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

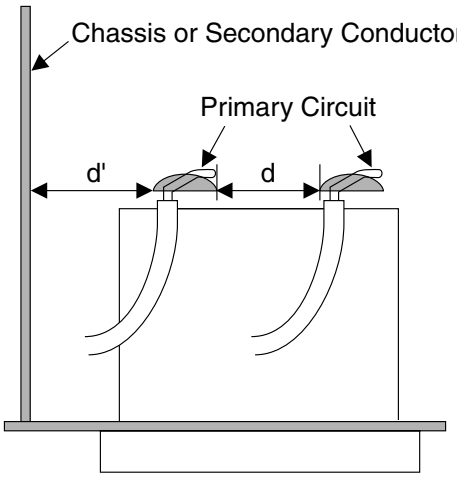


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

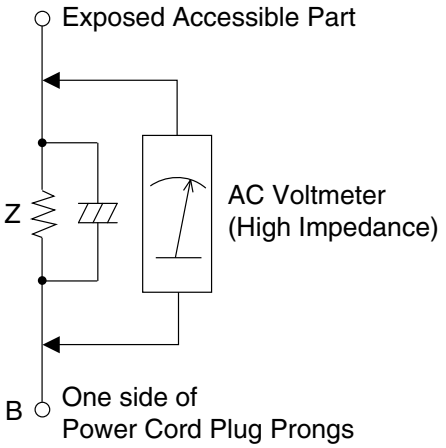


Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
220 to 240 V	2kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	RF or Antenna terminals
	50kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	A/V Input, Output

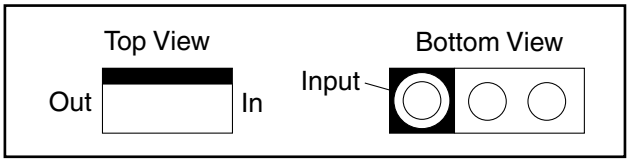
Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

STANDARD NOTES FOR SERVICING

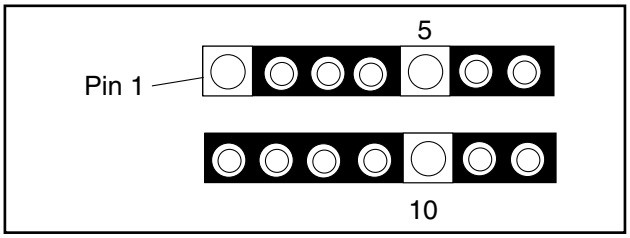
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Circuit Board Indications

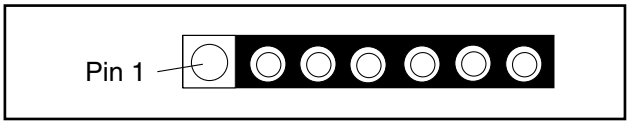
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

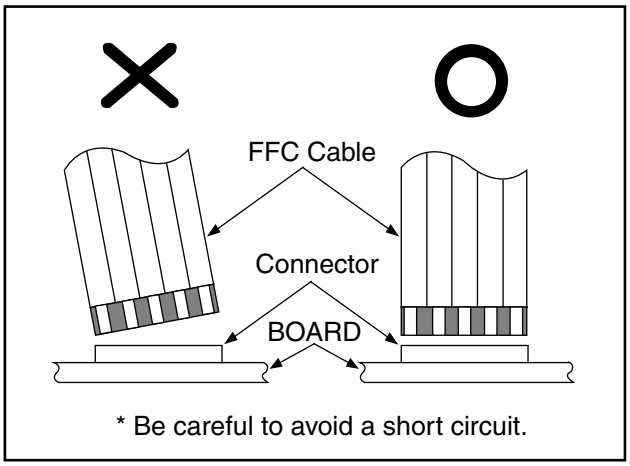


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

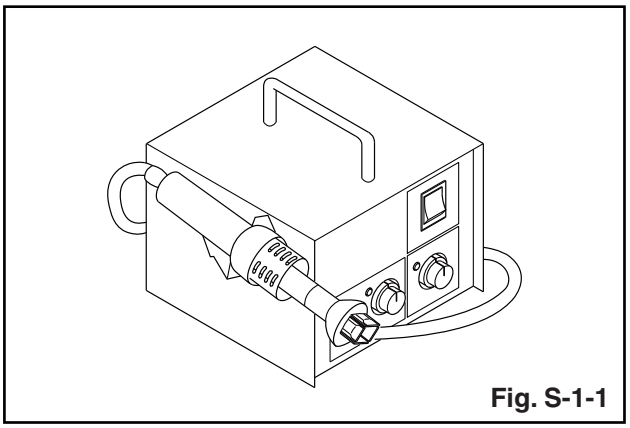


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the BOARD is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

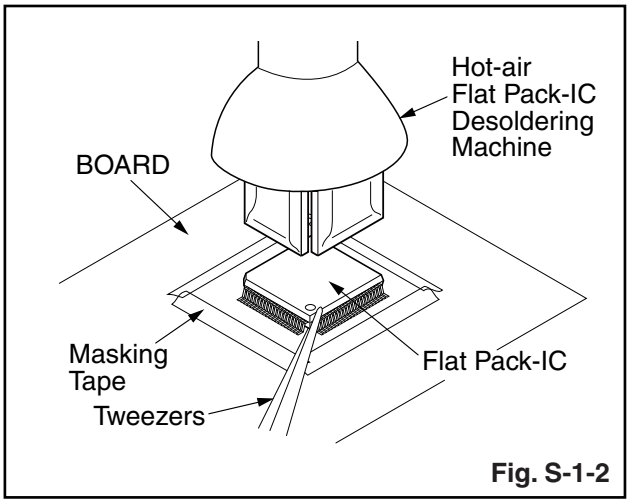


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

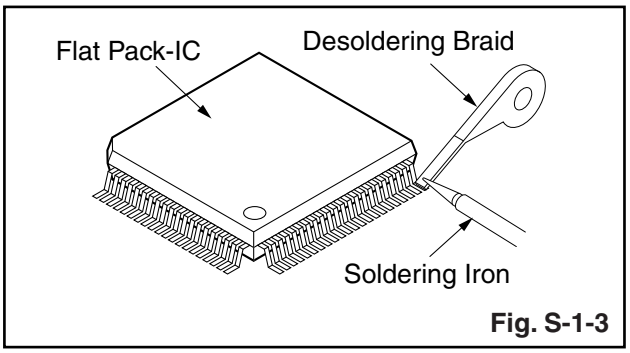


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

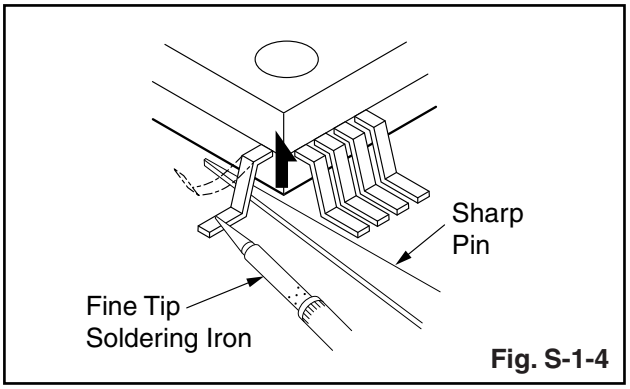


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the BOARD contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the BOARD, handle it gently because it may be damaged if force is applied.

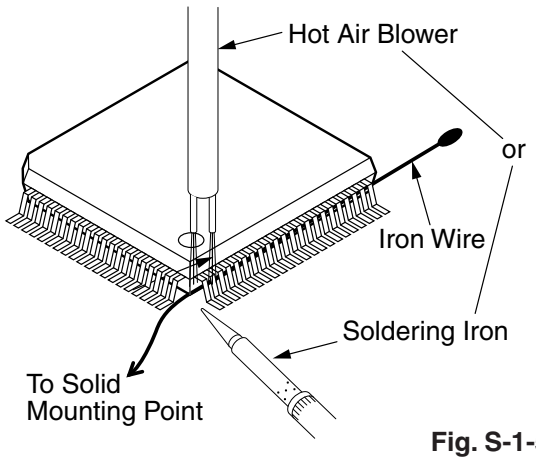


Fig. S-1-5

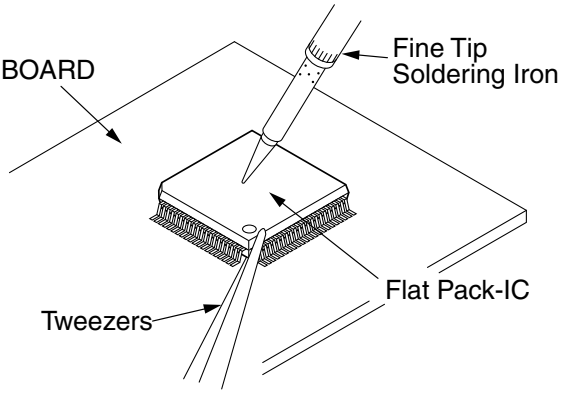
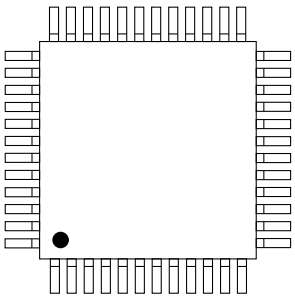


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the BOARD so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the BOARD when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

Example :



Pin 1 of the Flat Pack-IC
is indicated by a " ● " mark.

Fig. S-1-7

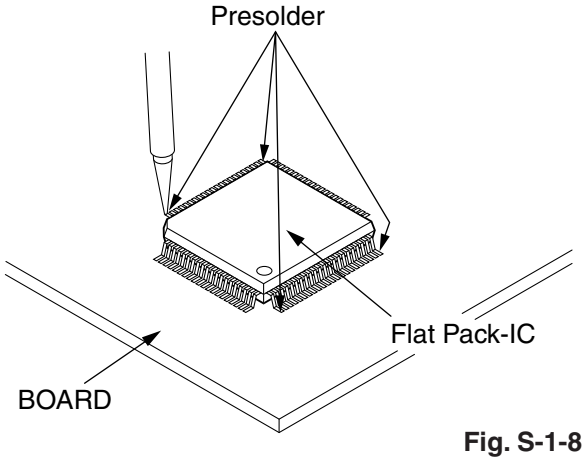


Fig. S-1-8

Instructions for Handling Semi-conductors

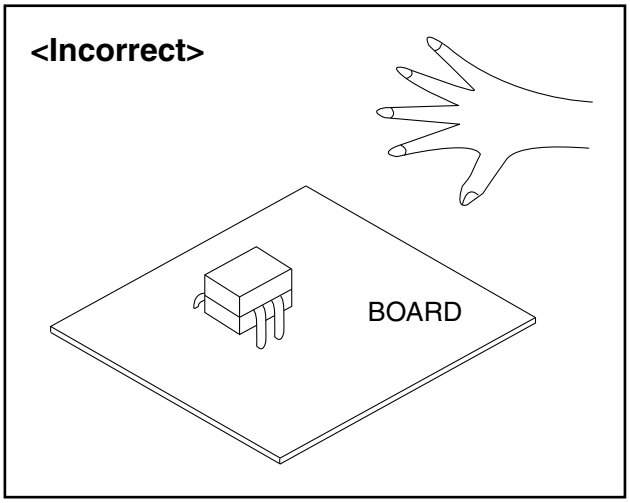
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

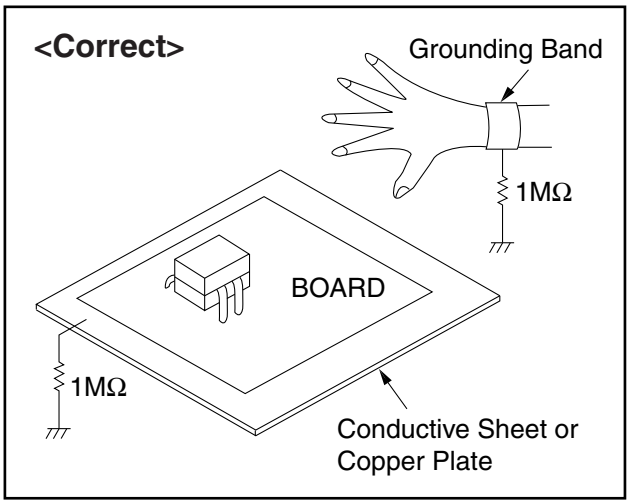
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP501 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

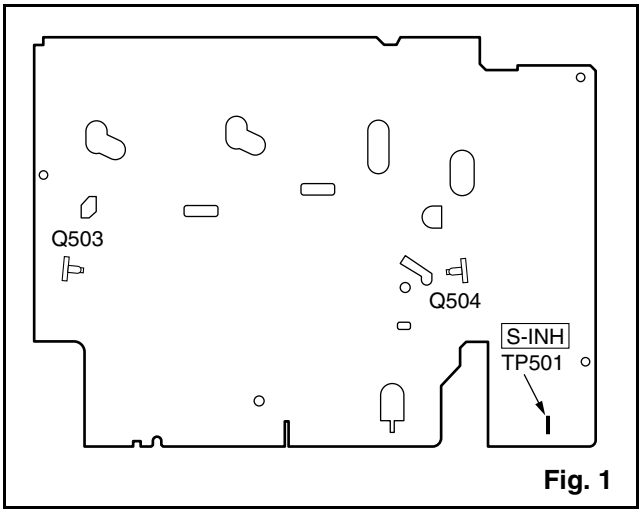


Fig. 1

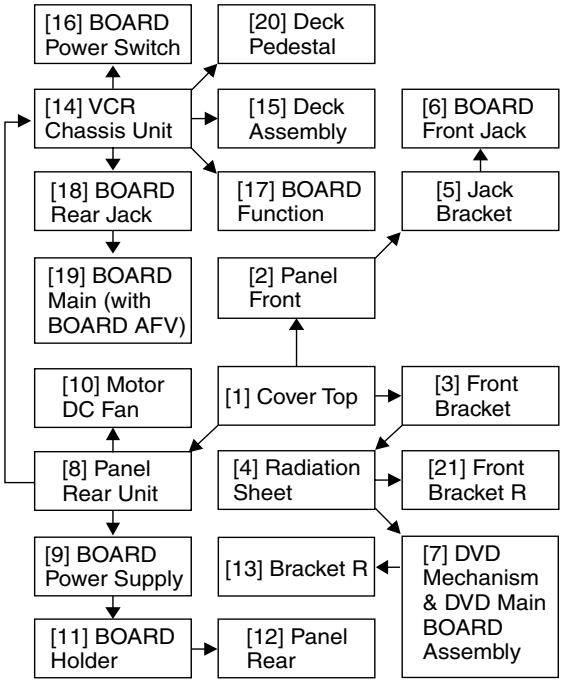
Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

CABINET DISASSEMBLY INSTRUCTIONS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Cover Top	D1	6(S-1)	---
[2]	Panel Front	D2	*5(L-1), *3(L-2), *CN1505	1 1-1 1-2 1-3
[3]	Front Bracket	D2	2(S-2), (S-3),	---
[4]	Radiation Sheet	D2	----------	---
[5]	Jack Bracket	D3	2(S-4)	---
[6]	BOARD Front Jack	D3	Jack Plate Earth	---
[7]	DVD Mechanism & DVD Main BOARD Assembly	D4	2(S-5A), 2(S-5B), *CN101, *CN701	---
[8]	Panel Rear Unit	D5	3(S-6A), 2(S-6B), 3(S-7), (S-8A), (S-8B), *CN1503, *CN1504	---
[9]	BOARD Power Supply	D6	4(S-9)	---
[10]	Motor DC Fan	D6	2(S-10)	---
[11]	BOARD Holder	D6	3(S-11), Plate Earth	---
[12]	Panel Rear	D6	----------	---
[13]	Bracket R	D7	2(S-12)	---
[14]	VCR Chassis Unit	D7	5(S-13), 2(S-14A), 4(S-14B), (S-15), (S-16)	---
[15]	Deck Assembly	D8	(S-17), (S-18), Desolder	2 3
[16]	BOARD Power Switch	D8	Desolder	---
[17]	BOARD Function	D8	Desolder	---
[18]	BOARD Rear Jack	D8	Desolder, Plate Earth	---
[19]	BOARD Main (with BOARD AFV)	D8	----------	---
[20]	Deck Pedestal	D9	8(S-19)	---
[21]	Front Bracket R	D9	(S-20)	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw,
CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder

e.g. 6(S-1) = six Screws (S-1),
5(L-1) = five Locking Tabs (L-1)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1-1. Release five Locking Tabs (L-1).

1-2. Release three Locking Tabs (L-2)

1-3. Disconnect Connector (CN1505), and remove the Front Assembly.

2. When reassembling, solder wire jumpers as shown in Fig. D8.

3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on BOAD Main as shown in Fig. D8. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D8.

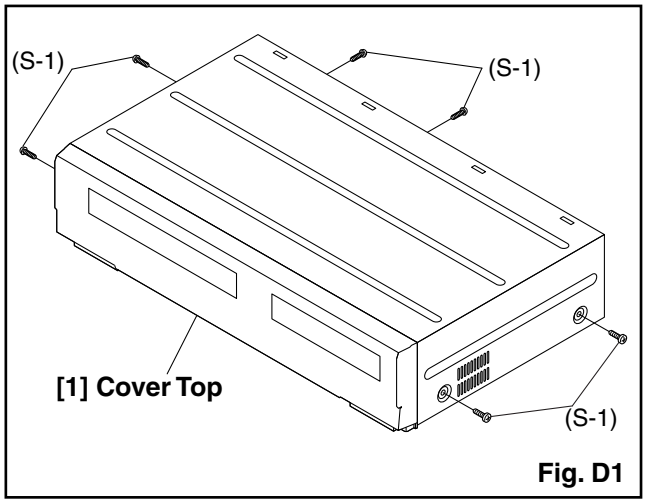


Fig. D1

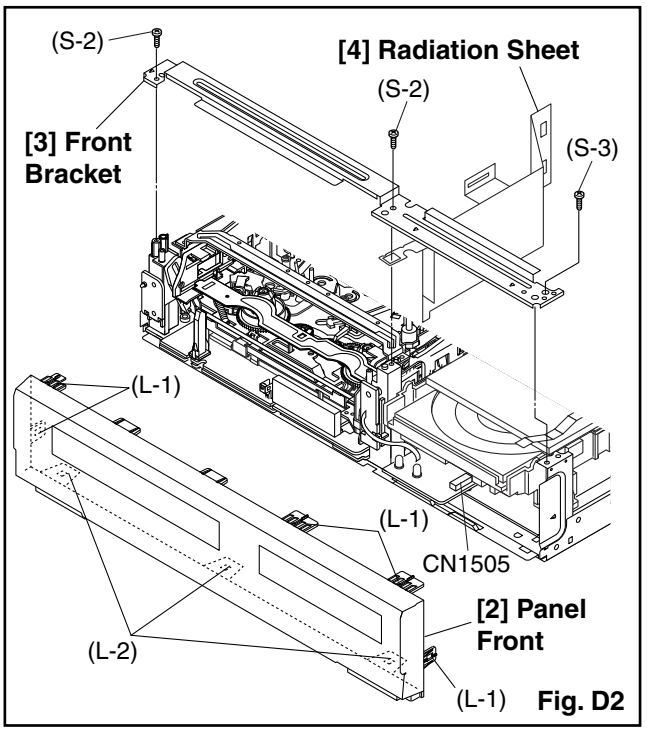


Fig. D2

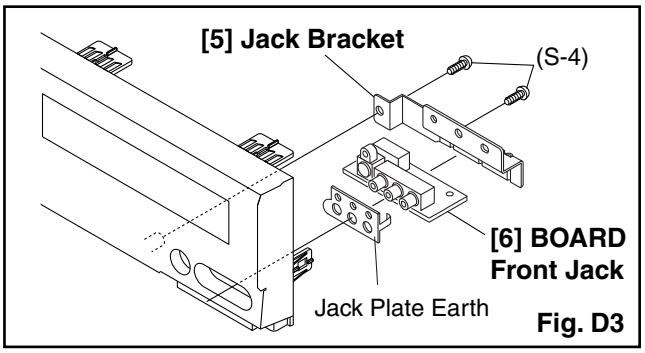


Fig. D3

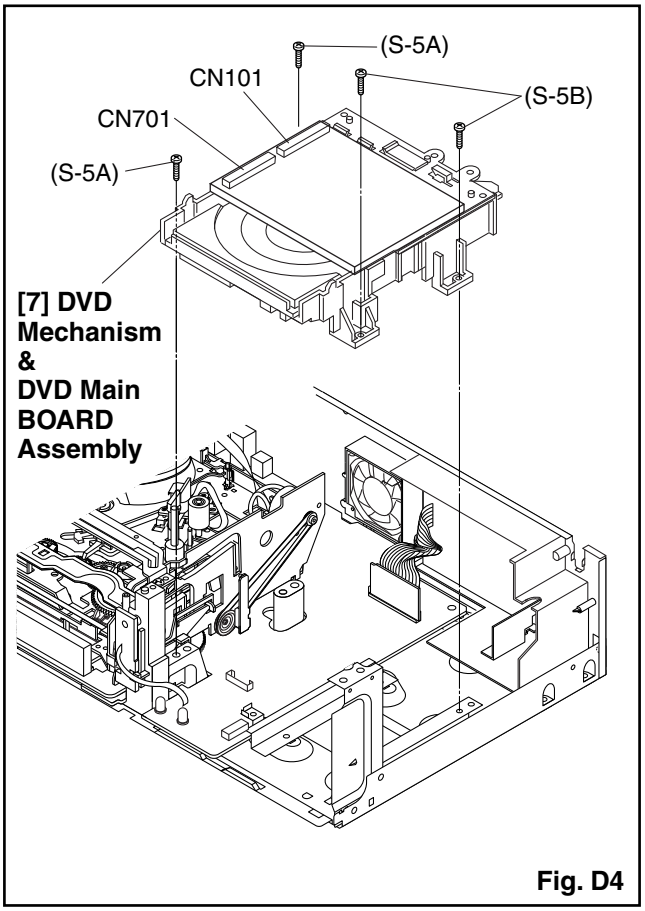


Fig. D4

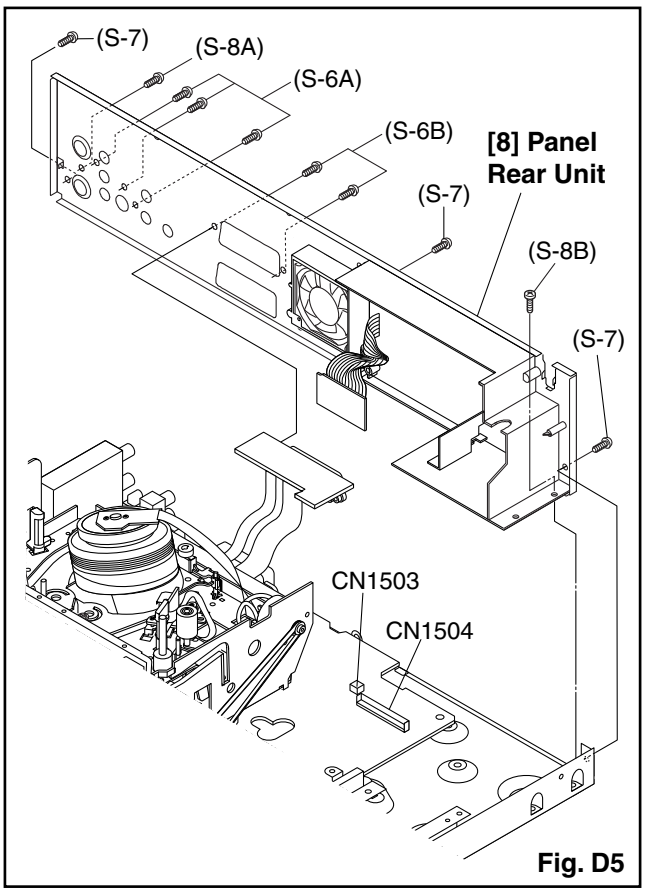


Fig. D5

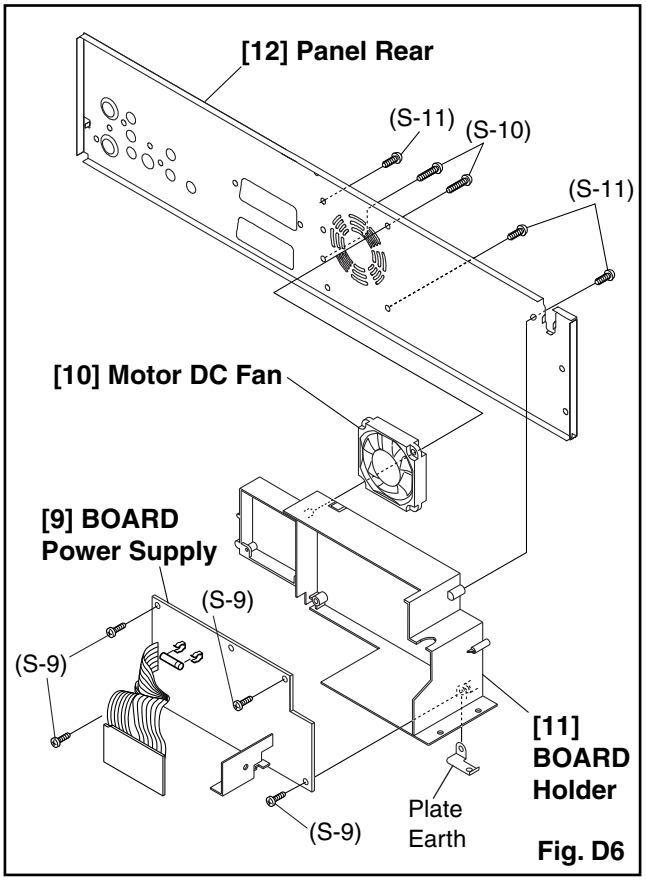


Fig. D6

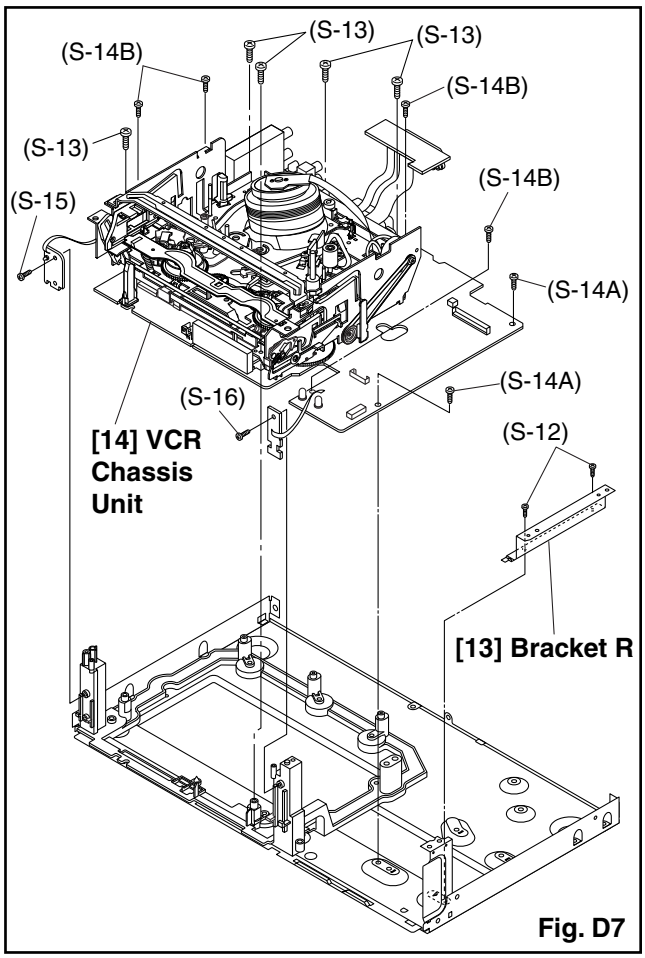
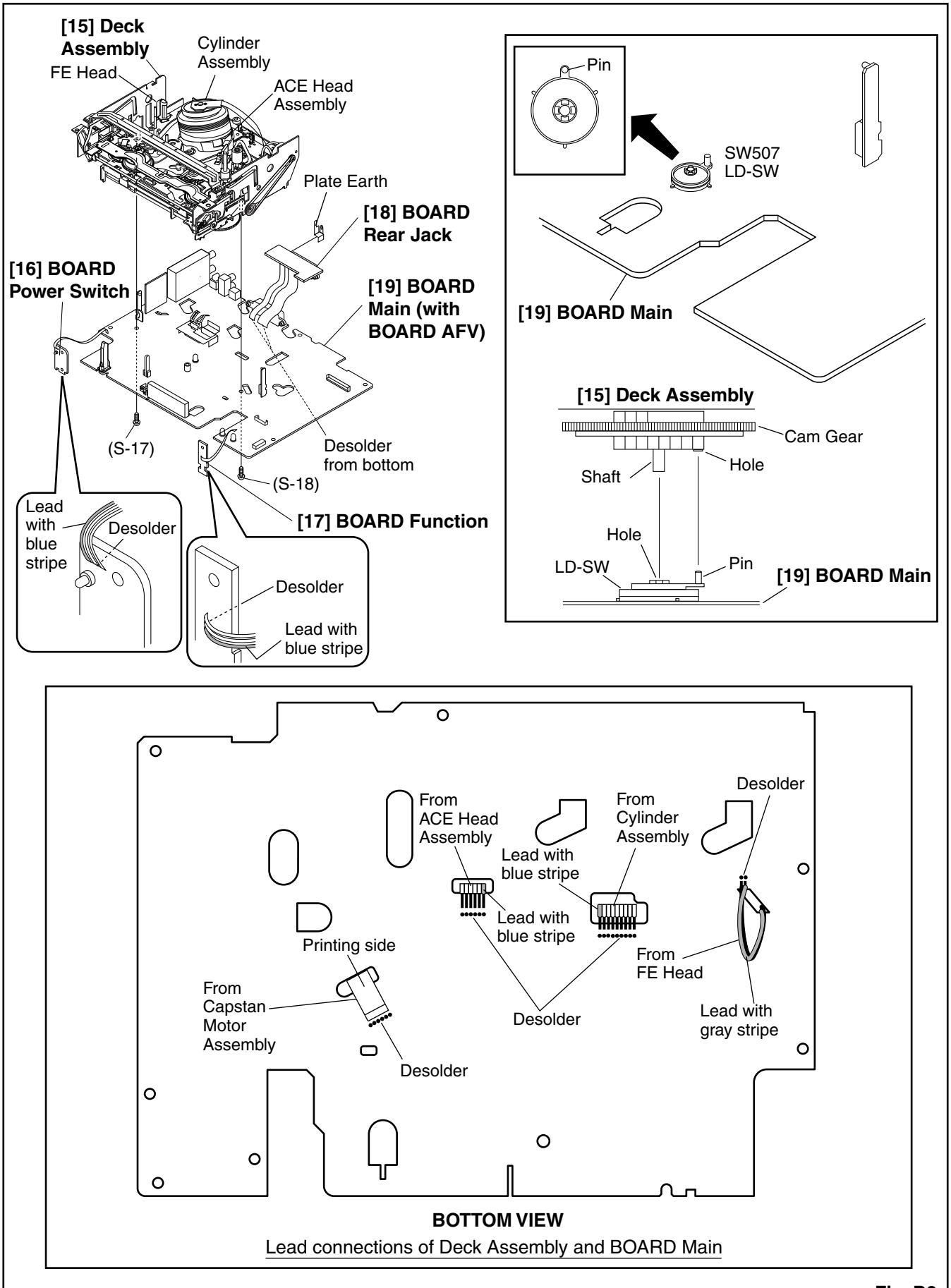

(S-13)
(S-13)
(S-14B)
(S-14B)
(S-13)
(S-14B)
(S-15)
(S-14A)
(S-14A)
(S-16)
(S-12)
[14] VCR Chassis Unit
[13] Bracket R

Fig. D7



BOTTOM VIEW

Lead connections of Deck Assembly and BOARD Main

Fig. D8

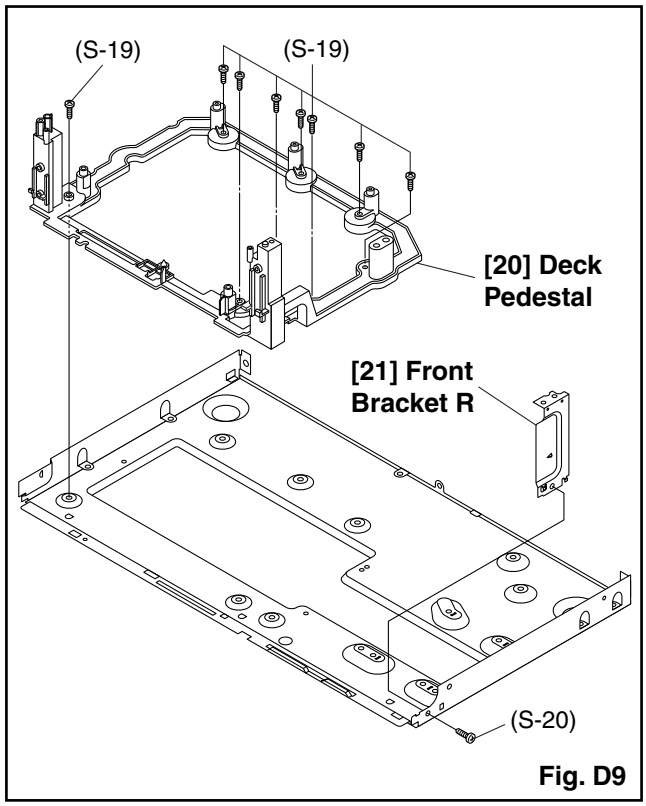
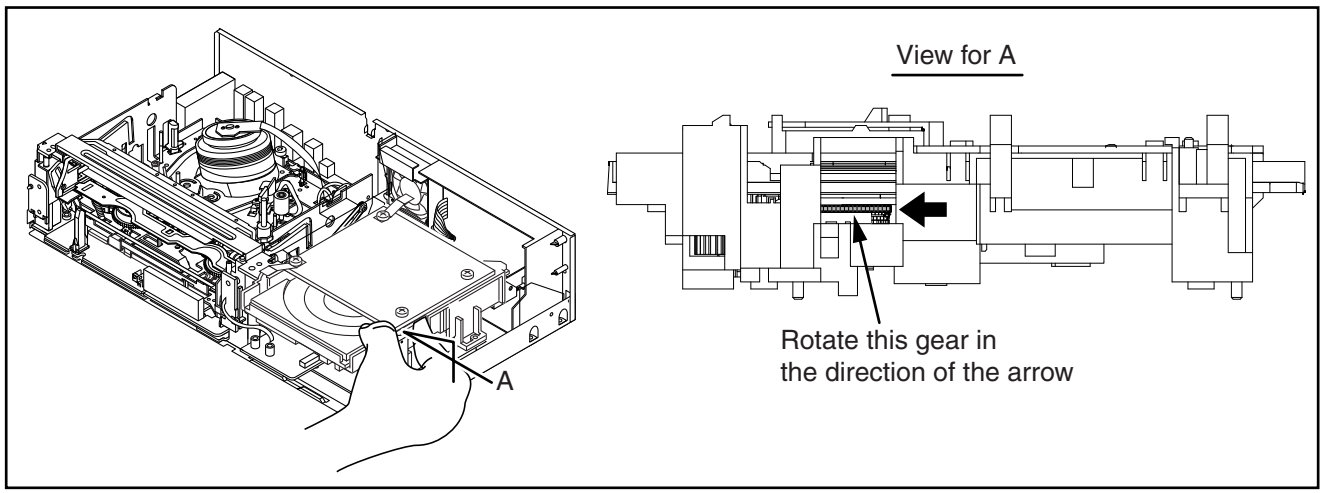


Fig. D9

3. How to Eject Manually

Note: When servicing, do not touch white resin part as shown below.
When rotating the gear, be careful not to damage the gear.

1. Remove the Cover Top.Remove the Cover Top.
2. Rotate the gear in the direction of the arrow manually as shown below
3. Pull the tray out manually and remove a disc.



ELECTRICAL ADJUSTMENT INSTRUCTIONS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either [PROGRAM ∨] or [PROGRAM ∧] button on the front panel first, then the [▷] (VCR) button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL6A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching position during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
J236(JK1-V-OUT) TP504(RF-SW) GND	VR501 (Switching Point) (BOARD MAIN)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL6A	Oscilloscope	6.5H±1H (416μs±64μs)	

Connections of Measurement Equipment

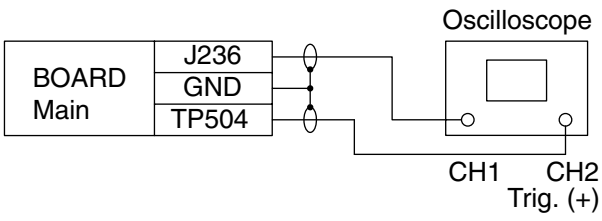
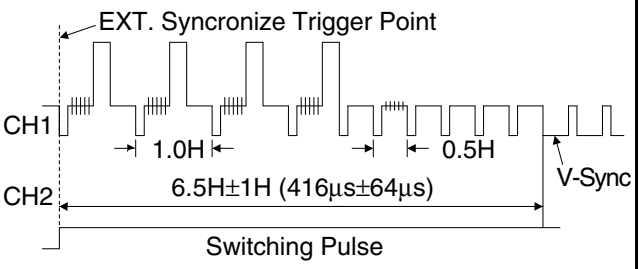


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H±1H (416μs±64μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

HOW TO INITIALIZE THE DVD RECORDER & VCR

To put the program back at the factory-default, initialize the DVD recorder & VCR as the following procedure.

< DVD Section >

1. Turn the DVD recorder on.
2. Confirm that no disc is loaded or that the disc tray is open. To put the DVD recorder into the Version display mode, press [DVD], [INSTANT SKIP], [1], [2], and [3] buttons on the remote control in that order.
   Fig. a appears on the screen.

*1: "*******" differs depending on the models.
*2: Firmware Version differs depending on the models, and this indication is one example.

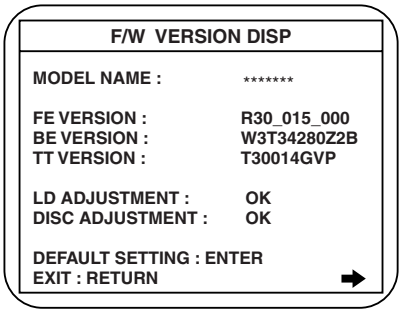


Fig. a Version Display Mode Screen

3. Press [ENTER] button, then the DVD recorder starts initializing. When the initializing is completed, the DVD recorder exits the Version display mode and turns off the power automatically.
   * To move into the Normal mode from the Version display mode, press [RETURN] button on the remote control instead of [ENTER] button.
   * When [I/⏻] button is pressed before [ENTER] button is pressed, the DVD recorder exits the Version display mode, then the power turns off.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD recorder into version up mode, press [INSTANT SKIP], [6], [5], and [4] buttons on the remote control unit in the order. Then the tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

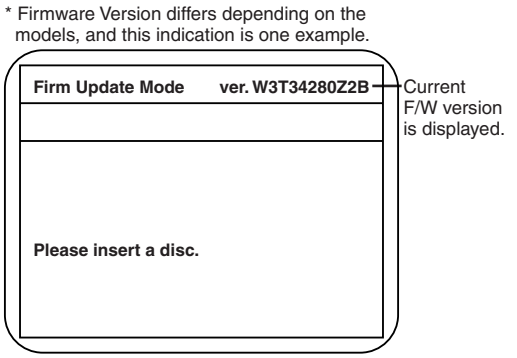

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode ver. W3T34280Z2B
Current F/W version is displayed.
Please insert a disc.

Fig. a Version Up Mode Screen

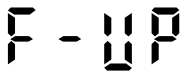


Fig. b VFD in Version Up Mode

3. Load the disc for version up.
   Fig. c appears on the screen. The file on the top is highlighted as the default.
   When there is only one file to exist, Step 4 will start automatically.

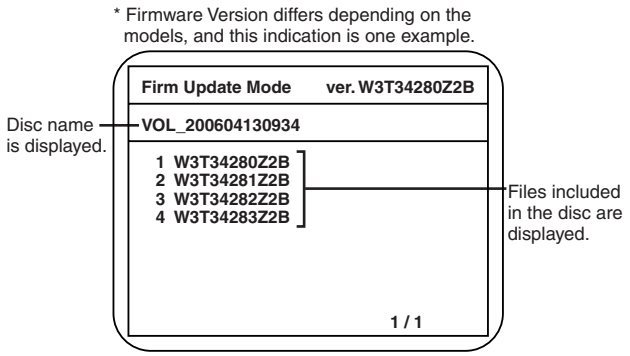

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode ver. W3T34280Z2B
Disc name is displayed.
VOL_200604130934
1 W3T34280Z2B
2 W3T34281Z2B
3 W3T34282Z2B
4 W3T34283Z2B
Files included in the disc are displayed.
1 / 1

Fig. c Update Disc Screen

4. Select the firmware version pressing arrow buttons, then press [ENTER].
   Fig. d appears on the screen and Fig. e appears on the VFD. The DVD recorder starts updating.

   About VFD indication of Fig. e:

   1) When Fig. d is displayed on the screen, “F-UP” is displayed on the VFD.
   2) When “Firmware Updating... XX% Complete.” is displayed on the screen, “30750” is displayed on the VFD.

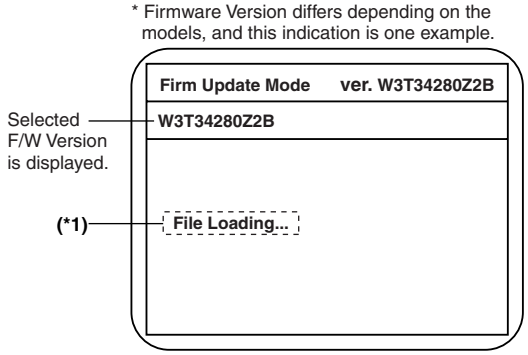

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode ver. W3T34280Z2B
Selected F/W Version is displayed.
W3T34280Z2B
(*1)
File Loading...

Fig. d Programming Mode Screen

Fig. e VFD in Programming Mode (Example)

The appearance shown in (*1) of Fig. d is described as follows.

No.	Appearance	State
1	File Loading...	Sending files into the memory
2	Firmware Updating... XX% Complete.	Writing new version data
---	Firmware Update Failure	Failed in updating

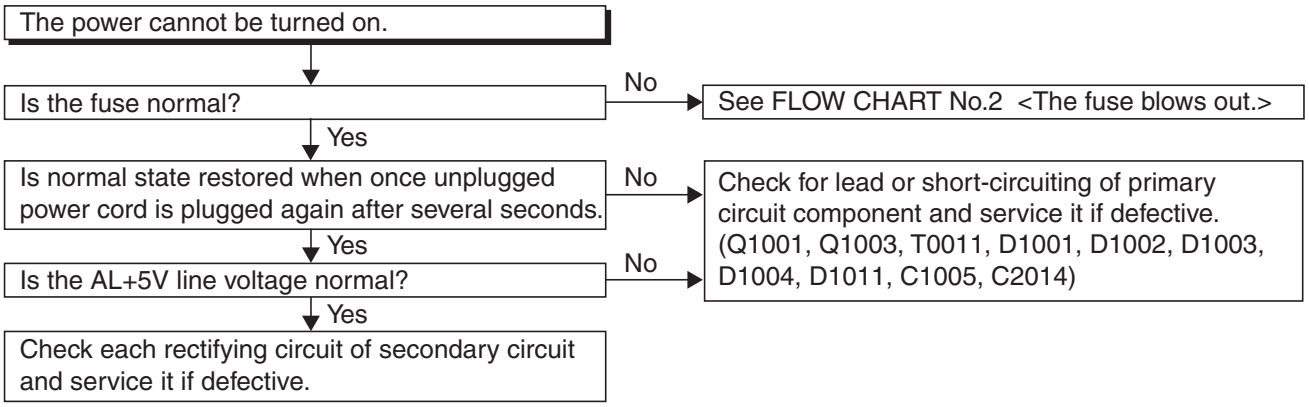
5. After updating is finished, the tray opens automatically.
   At this time, no button is available.
6. Pull out the AC code once, then insert it again.

TROUBLESHOOTING

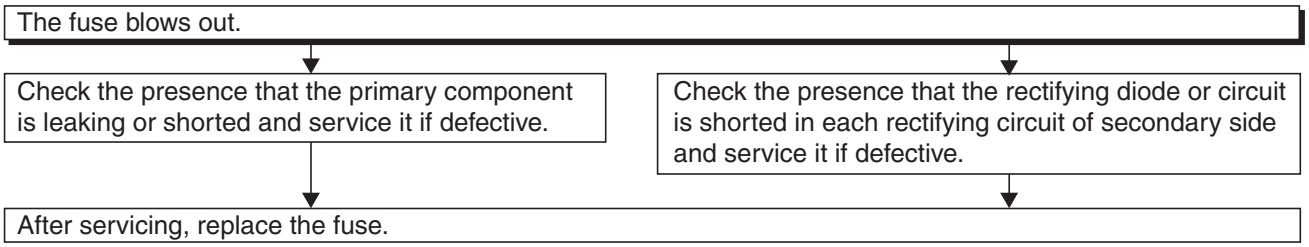
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

1 Power Supply Section

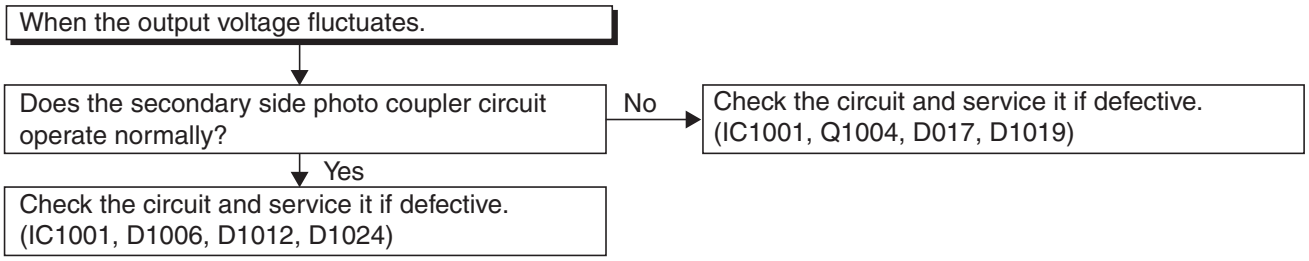
FLOW CHART NO.1


The power cannot be turned on.
Is the fuse normal?
No
See FLOW CHART No.2 <The fuse blows out.>
Yes
Is normal state restored when once unplugged power cord is plugged again after several seconds.
No
Check for lead or short-circuiting of primary circuit component and service it if defective. (Q1001, Q1003, T0011, D1001, D1002, D1003, D1004, D1011, C1005, C2014)
Yes
Is the AL+5V line voltage normal?
No
Yes
Check each rectifying circuit of secondary circuit and service it if defective.

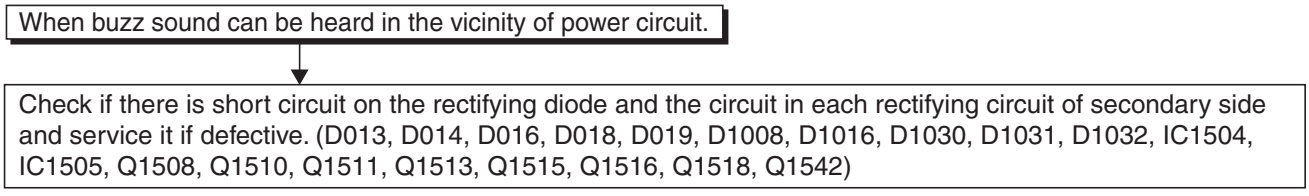
FLOW CHART NO.2


The fuse blows out.
Check the presence that the primary component is leaking or shorted and service it if defective.
Check the presence that the rectifying diode or circuit is shorted in each rectifying circuit of secondary side and service it if defective.
After servicing, replace the fuse.

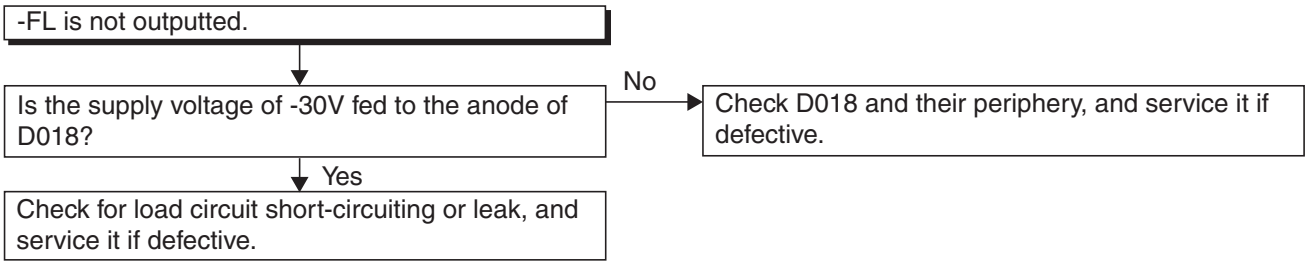
FLOW CHART NO.3


When the output voltage fluctuates.
Does the secondary side photo coupler circuit operate normally?
No
Check the circuit and service it if defective. (IC1001, Q1004, D017, D1019)
Yes
Check the circuit and service it if defective. (IC1001, D1006, D1012, D1024)

FLOW CHART NO.4


When buzz sound can be heard in the vicinity of power circuit.
Check if there is short circuit on the rectifying diode and the circuit in each rectifying circuit of secondary side and service it if defective. (D013, D014, D016, D018, D019, D1008, D1016, D1030, D1031, D1032, IC1504, IC1505, Q1508, Q1510, Q1511, Q1513, Q1515, Q1516, Q1518, Q1542)

FLOW CHART NO.5


-FL is not outputted.
Is the supply voltage of -30V fed to the anode of D018?
No
Check D018 and their periphery, and service it if defective.
Yes
Check for load circuit short-circuiting or leak, and service it if defective.

FLOW CHART NO.6

P-ON+44V is not outputted.

Is 44V voltage supplied to the emitter of Q1516?
- No → Check D013, C013, and their periphery, and service it if defective.
- Yes ↓

Is the "L" pulse (approximately 0V) inputted to the base of Q1516?
- No → Is the "H" pulse (approximately 5V) inputted to the base of Q1517?
  - Yes → Replace Q1517.
  - No → Is 5V voltage supplied to the Pin(37,99) of IC501.
    - Yes → Replace IC501.
    - No → Check AL+5V and Timer+5V line, and service it if defective.
- Yes ↓

Replace Q1516.

FLOW CHART NO.7

P-ON+9V is not outputted. (P-ON+44V is outputted normally)

Is 12V voltage supplied to the collector of Q1515?
- No → Check C014, D014, D017, L010, C015, and their periphery, and service it if defective.
- Yes ↓

Is the "H" pulse (approximately 10V) inputted to the base of Q1515?
- No → Check D1511, R1568, R1569, R1570, and their periphery, and service it if defective.
- Yes ↓

Replace Q1515.

FLOW CHART NO.8

P-ON+5V (AL+5V, EV+5.5V) is not outputted. (P-ON+9V is outputted normally)

Is 5V voltage supplied to the collector of Q1518?
- No → Check D016, D1032, L013, C017, C018, and their periphery, and service it if defective.
- Yes ↓

Is the "H" pulse inputted to the base of Q1518?
- No → Check R1523 and their periphery, and service it if defective.
- Yes ↓

Replace Q1518.

FLOW CHART NO.9

TIMER+5V is not outputted.

Is 5V voltage supplied to the emitter of Q1513?
- No → Check D016, D1032, L013, C017, C018 and their periphery, and service it if defective.
- Yes ↓

Is the "L" pulse outputted to the collector of Q1512?
- No → Check Q1512, D1508 and their periphery, and service it if defective.
- Yes ↓

Replace Q1513.

FLOW CHART NO.10

P-ON+2.5V is not outputted.

Is 4V voltage supplied to Pin(1) of IC1504?
- No → Check D1008, C1007, and their periphery, and service it if defective.
- Yes ↓

Replace IC1504.

FLOW CHART NO.11

DVD-P-ON+3.3V is not outputted.

↓

Is 5V voltage supplied to Pin(1) of IC1505? — No → Check D016, D1032, L013, C017, C018 and their periphery, and service it if defective.

↓ Yes

Replace IC1505.

FLOW CHART NO.12

DVD-P-ON+12V is not outputted.

↓

Is 12V voltage supplied to the emitter of Q1511? — No → Check D1031, L1013, C1037, C1039 and their periphery, and service it if defective.

↓ Yes

Is the "L" pulse outputted to the collector of Q1514? — No → Check Q1514 and PWR-SW line, and service it if defective.

↓ Yes

Replace Q1511.

FLOW CHART NO.13

DVD-P-ON+5V is not outputted. (AL+5V is outputted normally.)

↓

Is the "H" pulse inputted to the base of Q1510? — No → Check R1531, R1532, R1710, R1711 and their periphery, and service it if defective.

↓ Yes

Replace Q1510.

FLOW CHART NO.14

The fluorescent display tube does not light up.

↓

Is 5V voltage supplied to Pin(13, 43) of IC612? — No → Check the EV+5V line and service it if defective.

↓ Yes

Is approximately -24V to -28V voltage supplied to Pin(30) of IC612? — No → Check the -FL line and service it if defective.

↓ Yes

Is there approximately 500kHz oscillation to Pin(5) of IC612? — No → Check R618, IC612 and their periphery, and service it if defective.

↓ Yes

Are the filament voltage applied between Pin(1) and Pin(24) of the fluorescent display tube? Also negative voltage applied between these pins and GND? — No → Check the power circuit, D1016, D1017, R1040, R1041, C1018 and their periphery, and service it if defective.

↓ Yes

Replace the fluorescent display tube (FL601).

2 DVD Section

FLOW CHART NO.1

The key operation is not functioning.

↓

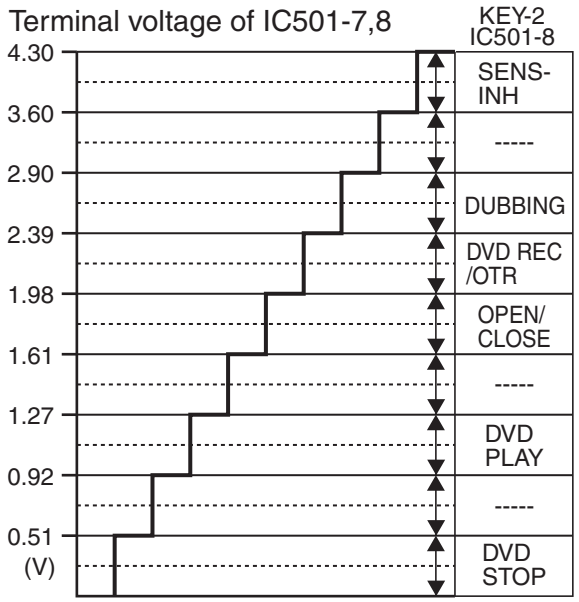
Are the contact point and the installation state of the key switches normal? — No → Re-install the key switches correctly or replace the poor switch.

↓ Yes

Is the control voltage normally inputted into Pin(8) of IC501? — No → Check the key switches and their periphery, and service it if defective.

↓ Yes

Replace IC501 or DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.



FLOW CHART NO.2

No DVD operation is possible from the remote control unit. (Operation is possible from the unit.)

↓

Is 5V voltage supplied to Pin(3) terminal of the RM1501 (remote control receiver)? — No → Check AL+5V line, and service it if defective.

↓ Yes

Is the "L" pulse sent out from Pin(1) terminal of the RM1501 (remote control receiver) when the remote control unit is activated? — No → Replace the RM1501 (remote control receiver). Replace remote control unit if needed.

↓ Yes

Is the "L" pulse signal supplied to Pin(14) of IC501? — No → Check the line between the RM1501 (remote control receiver) and Pin(14) of IC501, and service it if defective.

↓ Yes

Replace IC501 or DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

FLOW CHART NO.3

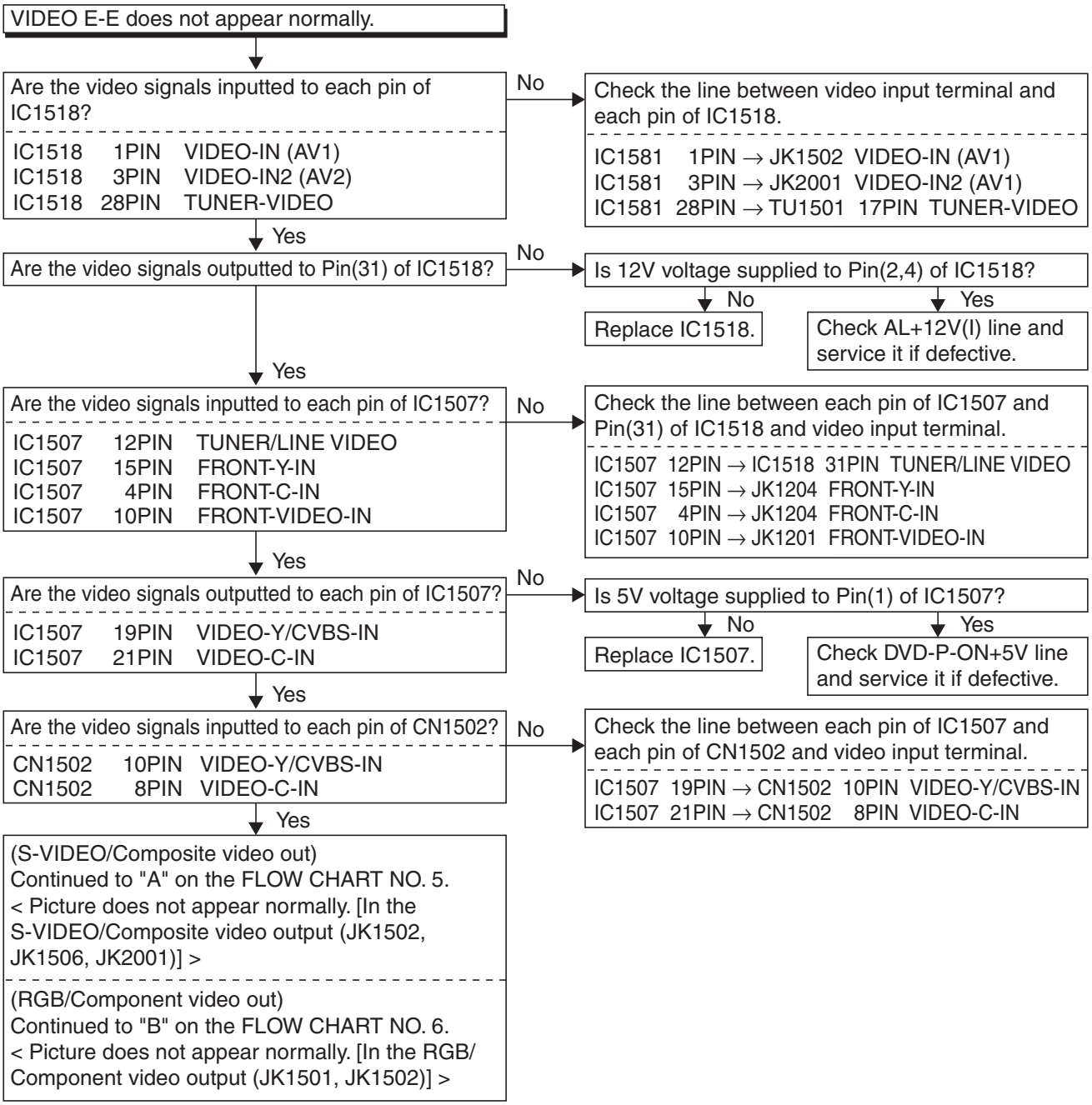
The [No Disc] indication.

Both picture and sound do not operate normally.

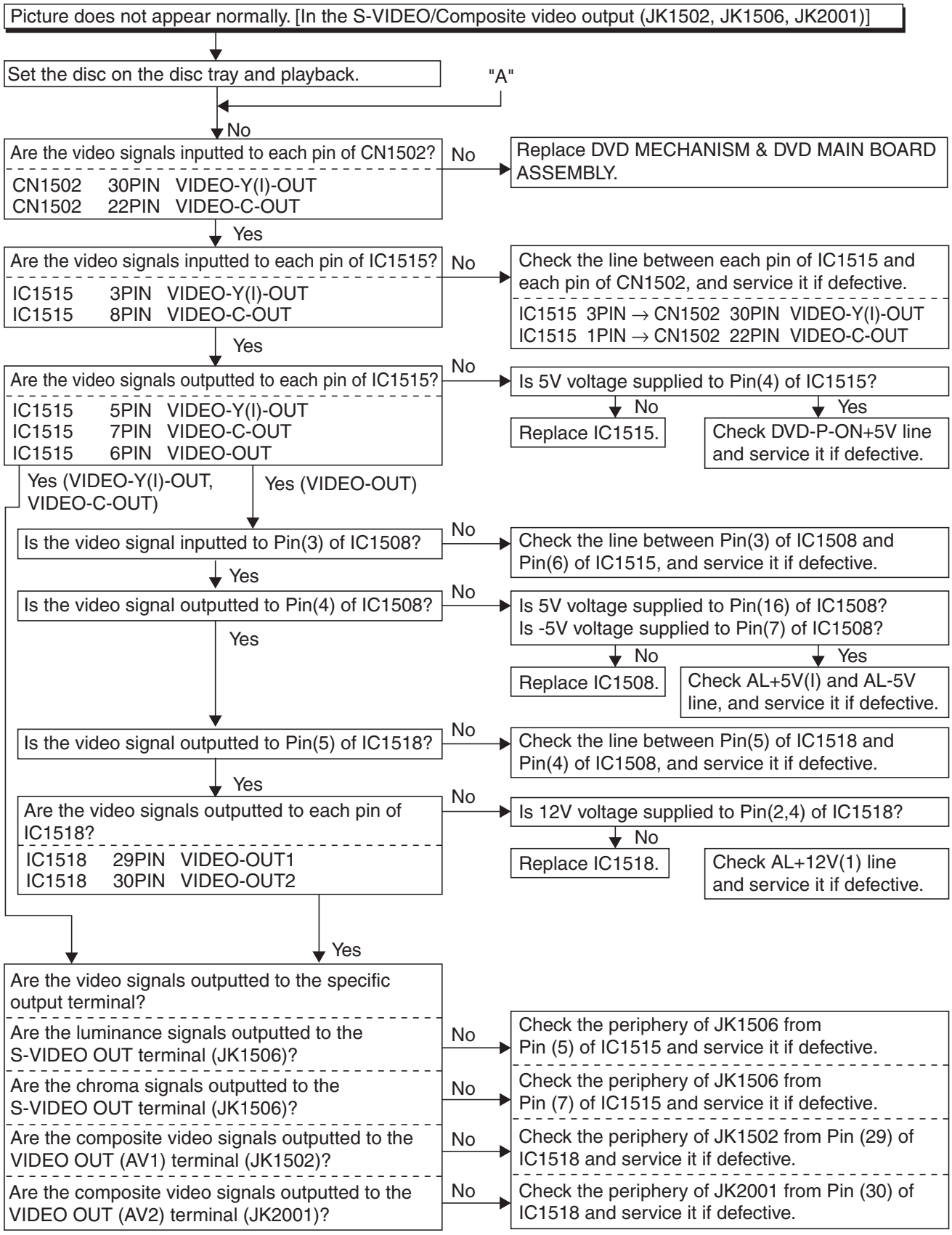
↓

Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

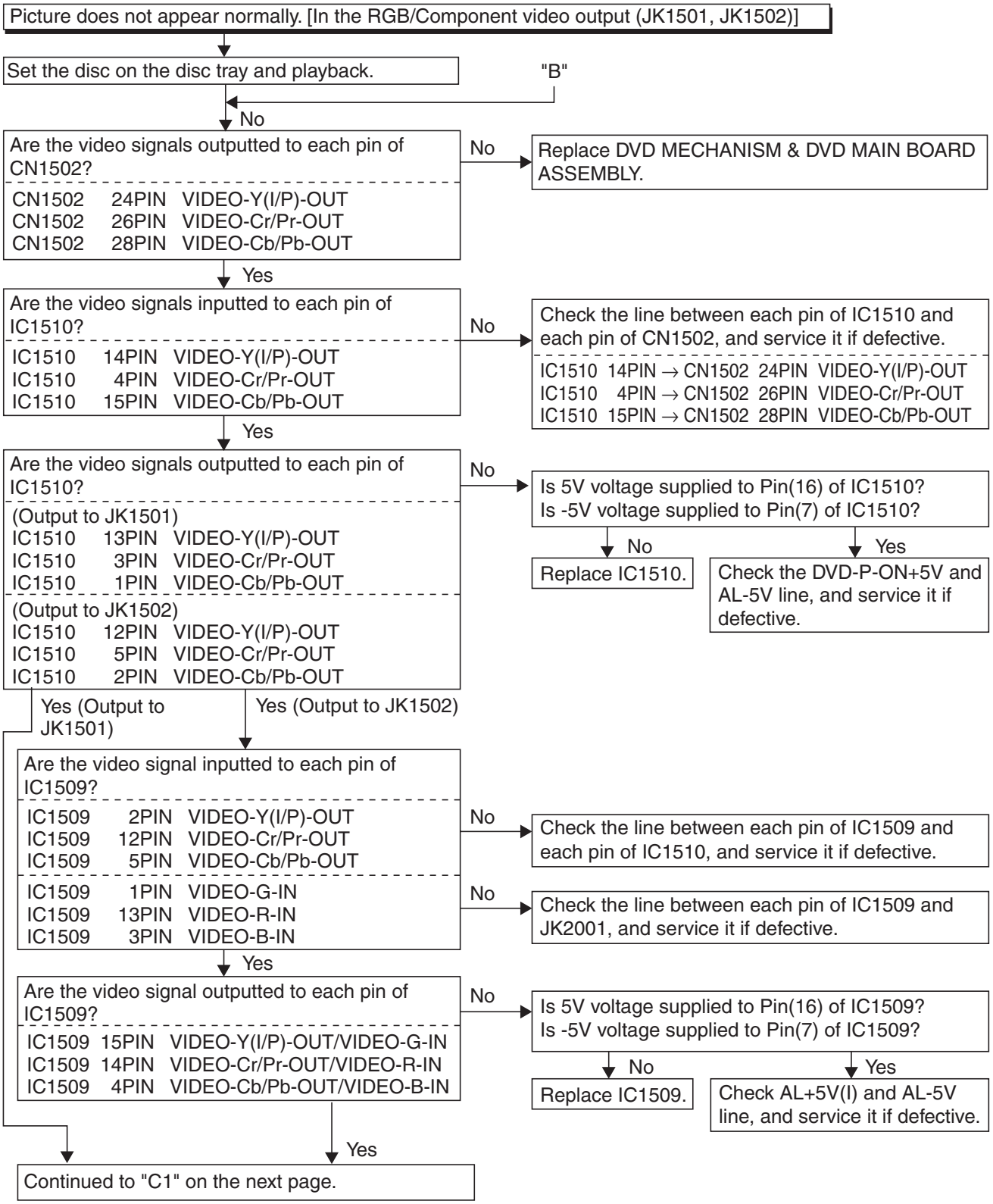
FLOW CHART NO.4

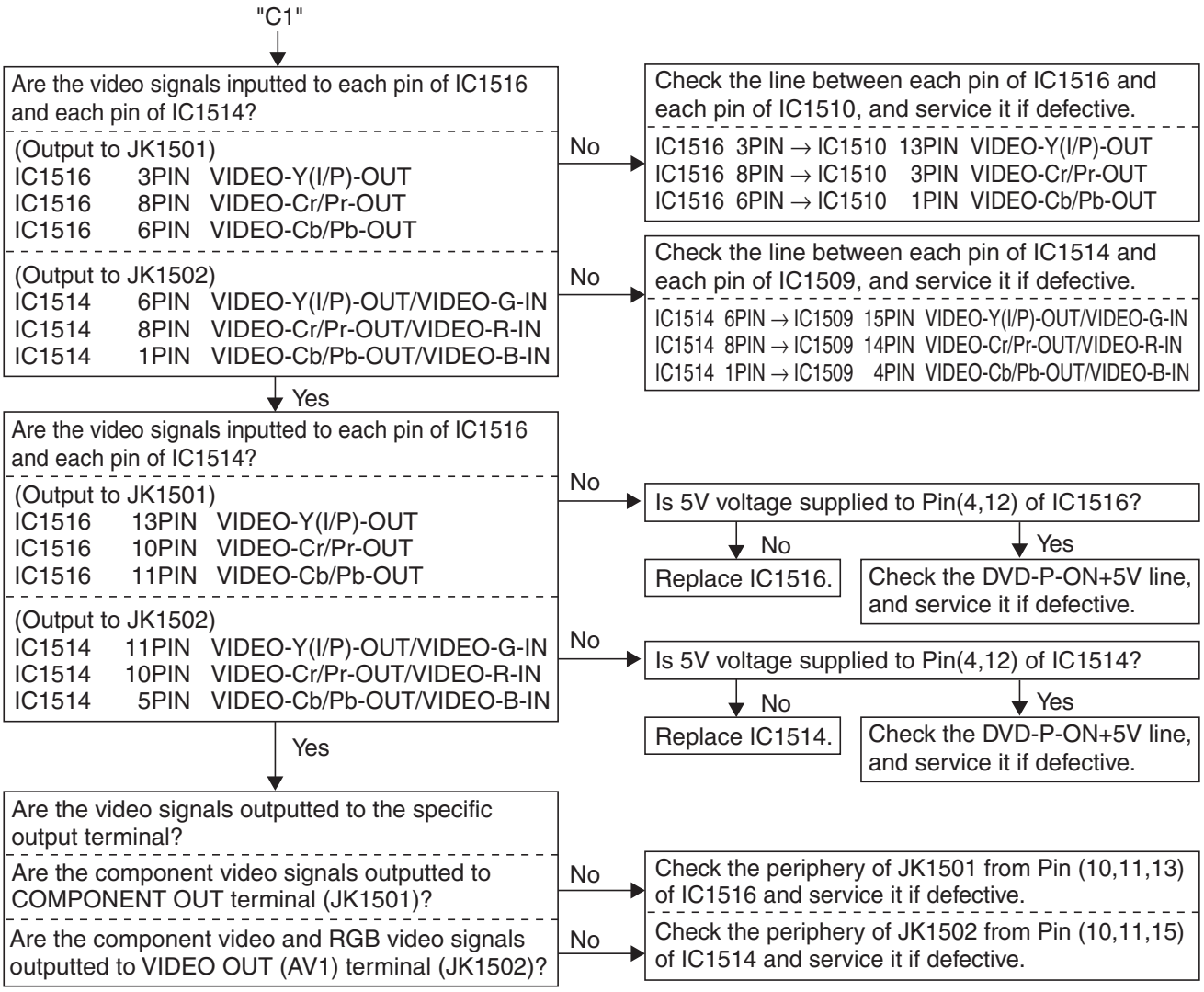


FLOW CHART NO.5

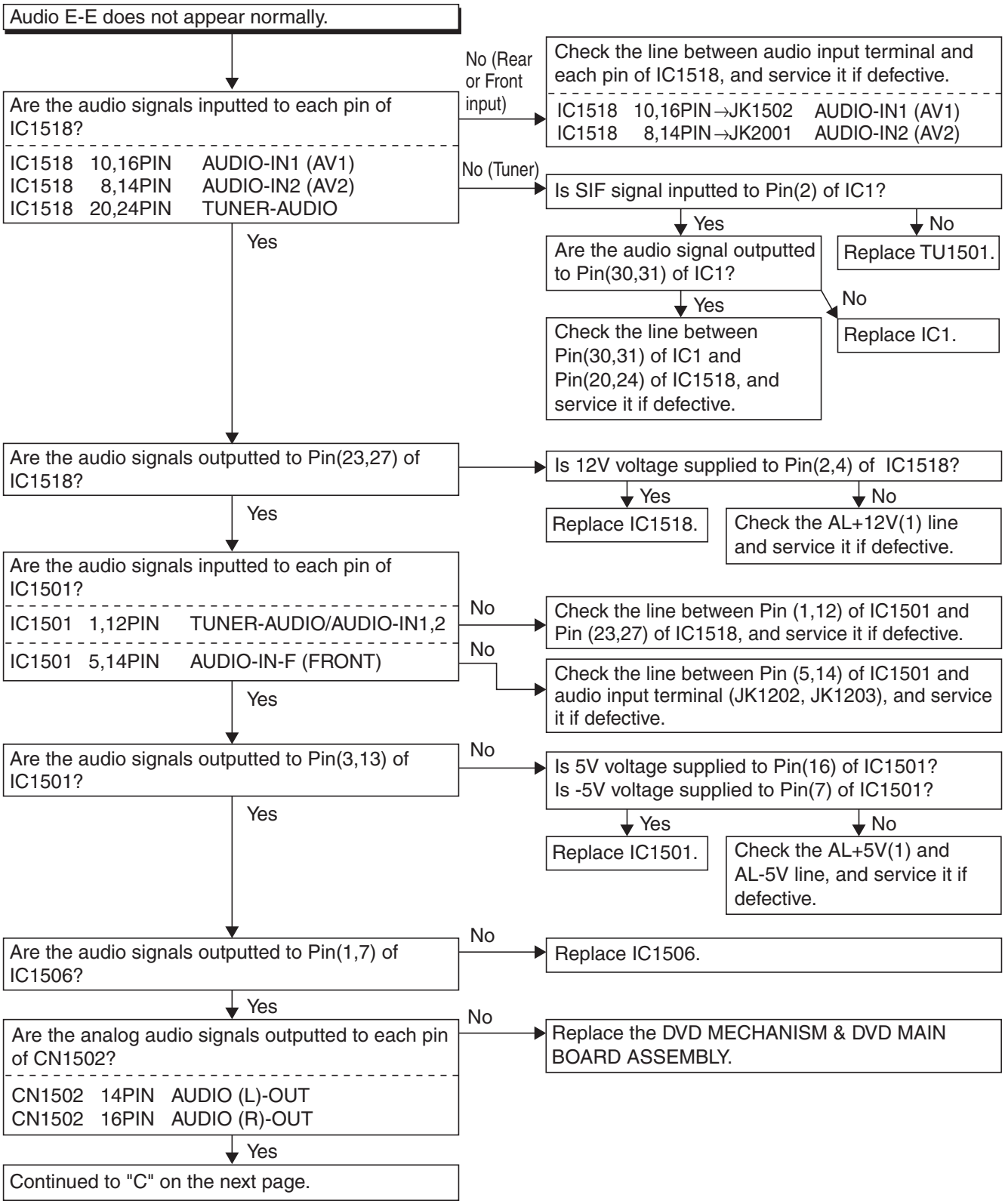

Picture does not appear normally. [In the S-VIDEO/Composite video output (JK1502, JK1506, JK2001)]
Set the disc on the disc tray and playback.
"A"
No
Are the video signals inputted to each pin of CN1502?
CN1502 30PIN VIDEO-Y(I)-OUT
CN1502 22PIN VIDEO-C-OUT
No
Replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the video signals inputted to each pin of IC1515?
IC1515 3PIN VIDEO-Y(I)-OUT
IC1515 8PIN VIDEO-C-OUT
No
Check the line between each pin of IC1515 and each pin of CN1502, and service it if defective.
IC1515 3PIN → CN1502 30PIN VIDEO-Y(I)-OUT
IC1515 1PIN → CN1502 22PIN VIDEO-C-OUT
Yes
Are the video signals outputted to each pin of IC1515?
IC1515 5PIN VIDEO-Y(I)-OUT
IC1515 7PIN VIDEO-C-OUT
IC1515 6PIN VIDEO-OUT
No
Is 5V voltage supplied to Pin(4) of IC1515?
No
Replace IC1515.
Yes
Check DVD-P-ON+5V line and service it if defective.
Yes (VIDEO-Y(I)-OUT, VIDEO-C-OUT)
Yes (VIDEO-OUT)
Is the video signal inputted to Pin(3) of IC1508?
No
Check the line between Pin(3) of IC1508 and Pin(6) of IC1515, and service it if defective.
Yes
Is the video signal outputted to Pin(4) of IC1508?
No
Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?
Yes
No
Replace IC1508.
Yes
Check AL+5V(I) and AL-5V line, and service it if defective.
Is the video signal outputted to Pin(5) of IC1518?
No
Check the line between Pin(5) of IC1518 and Pin(4) of IC1508, and service it if defective.
Yes
Are the video signals outputted to each pin of IC1518?
IC1518 29PIN VIDEO-OUT1
IC1518 30PIN VIDEO-OUT2
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
No
Replace IC1518.
Check AL+12V(1) line and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the luminance signals outputted to the S-VIDEO OUT terminal (JK1506)?
No
Check the periphery of JK1506 from Pin (5) of IC1515 and service it if defective.
Are the chroma signals outputted to the S-VIDEO OUT terminal (JK1506)?
No
Check the periphery of JK1506 from Pin (7) of IC1515 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV1) terminal (JK1502)?
No
Check the periphery of JK1502 from Pin (29) of IC1518 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV2) terminal (JK2001)?
No
Check the periphery of JK2001 from Pin (30) of IC1518 and service it if defective.

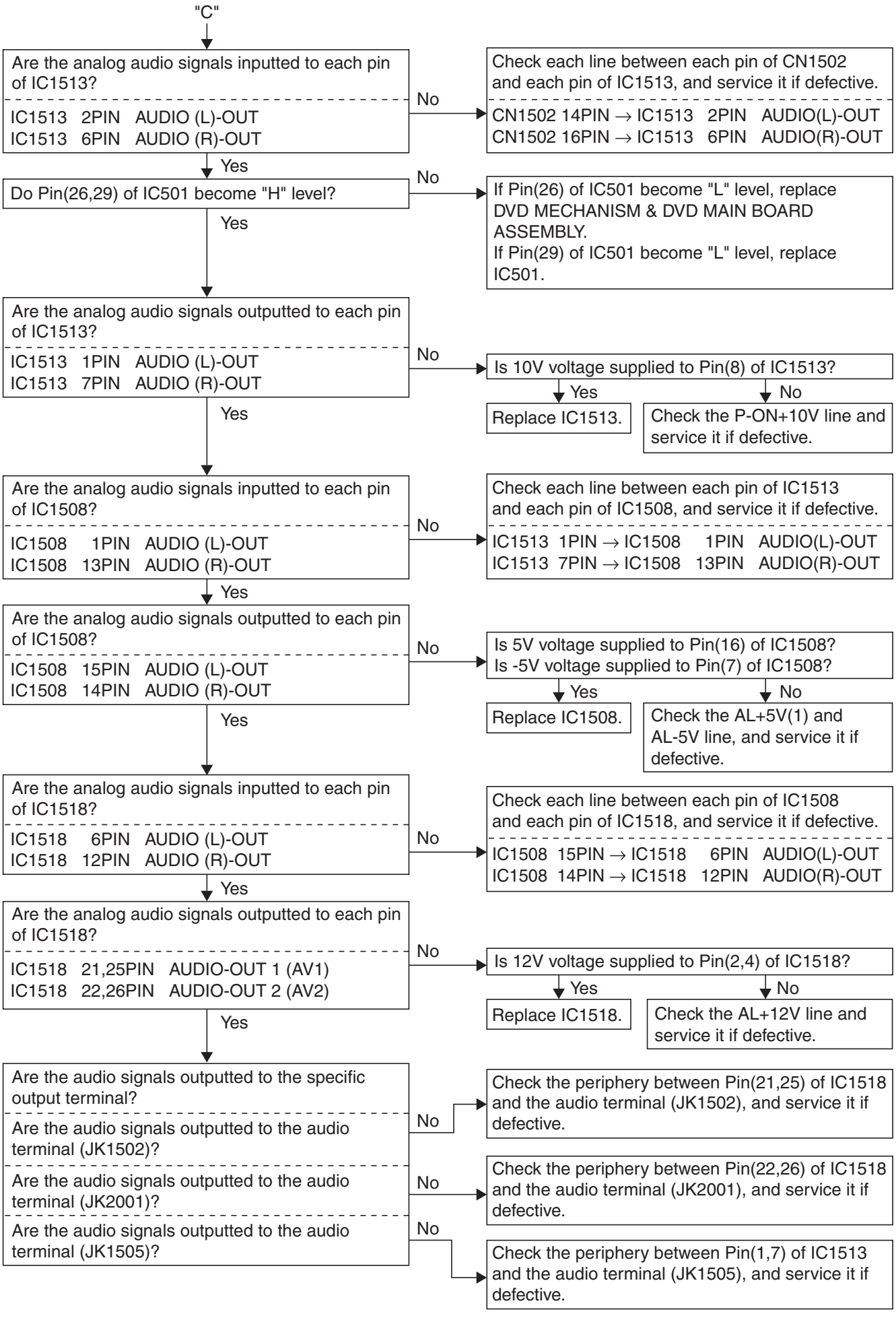
FLOW CHART NO.6


Picture does not appear normally. [In the RGB/Component video output (JK1501, JK1502)]
Set the disc on the disc tray and playback.
"B"
No
Are the video signals outputted to each pin of CN1502?
CN1502 24PIN VIDEO-Y(I/P)-OUT
CN1502 26PIN VIDEO-Cr/Pr-OUT
CN1502 28PIN VIDEO-Cb/Pb-OUT
No
Replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the video signals inputted to each pin of IC1510?
IC1510 14PIN VIDEO-Y(I/P)-OUT
IC1510 4PIN VIDEO-Cr/Pr-OUT
IC1510 15PIN VIDEO-Cb/Pb-OUT
No
Check the line between each pin of IC1510 and each pin of CN1502, and service it if defective.
IC1510 14PIN → CN1502 24PIN VIDEO-Y(I/P)-OUT
IC1510 4PIN → CN1502 26PIN VIDEO-Cr/Pr-OUT
IC1510 15PIN → CN1502 28PIN VIDEO-Cb/Pb-OUT
Yes
Are the video signals outputted to each pin of IC1510?
(Output to JK1501)
IC1510 13PIN VIDEO-Y(I/P)-OUT
IC1510 3PIN VIDEO-Cr/Pr-OUT
IC1510 1PIN VIDEO-Cb/Pb-OUT
(Output to JK1502)
IC1510 12PIN VIDEO-Y(I/P)-OUT
IC1510 5PIN VIDEO-Cr/Pr-OUT
IC1510 2PIN VIDEO-Cb/Pb-OUT
No
Is 5V voltage supplied to Pin(16) of IC1510?
Is -5V voltage supplied to Pin(7) of IC1510?
No
Replace IC1510.
Yes
Check the DVD-P-ON+5V and AL-5V line, and service it if defective.
Yes (Output to JK1501)
Yes (Output to JK1502)
Are the video signal inputted to each pin of IC1509?
IC1509 2PIN VIDEO-Y(I/P)-OUT
IC1509 12PIN VIDEO-Cr/Pr-OUT
IC1509 5PIN VIDEO-Cb/Pb-OUT
No
Check the line between each pin of IC1509 and each pin of IC1510, and service it if defective.
IC1509 1PIN VIDEO-G-IN
IC1509 13PIN VIDEO-R-IN
IC1509 3PIN VIDEO-B-IN
No
Check the line between each pin of IC1509 and JK2001, and service it if defective.
Yes
Are the video signal outputted to each pin of IC1509?
IC1509 15PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1509 14PIN VIDEO-Cr/Pr-OUT/VIDEO-R-IN
IC1509 4PIN VIDEO-Cb/Pb-OUT/VIDEO-B-IN
No
Is 5V voltage supplied to Pin(16) of IC1509?
Is -5V voltage supplied to Pin(7) of IC1509?
No
Replace IC1509.
Yes
Check AL+5V(I) and AL-5V line, and service it if defective.
Yes
Continued to "C1" on the next page.

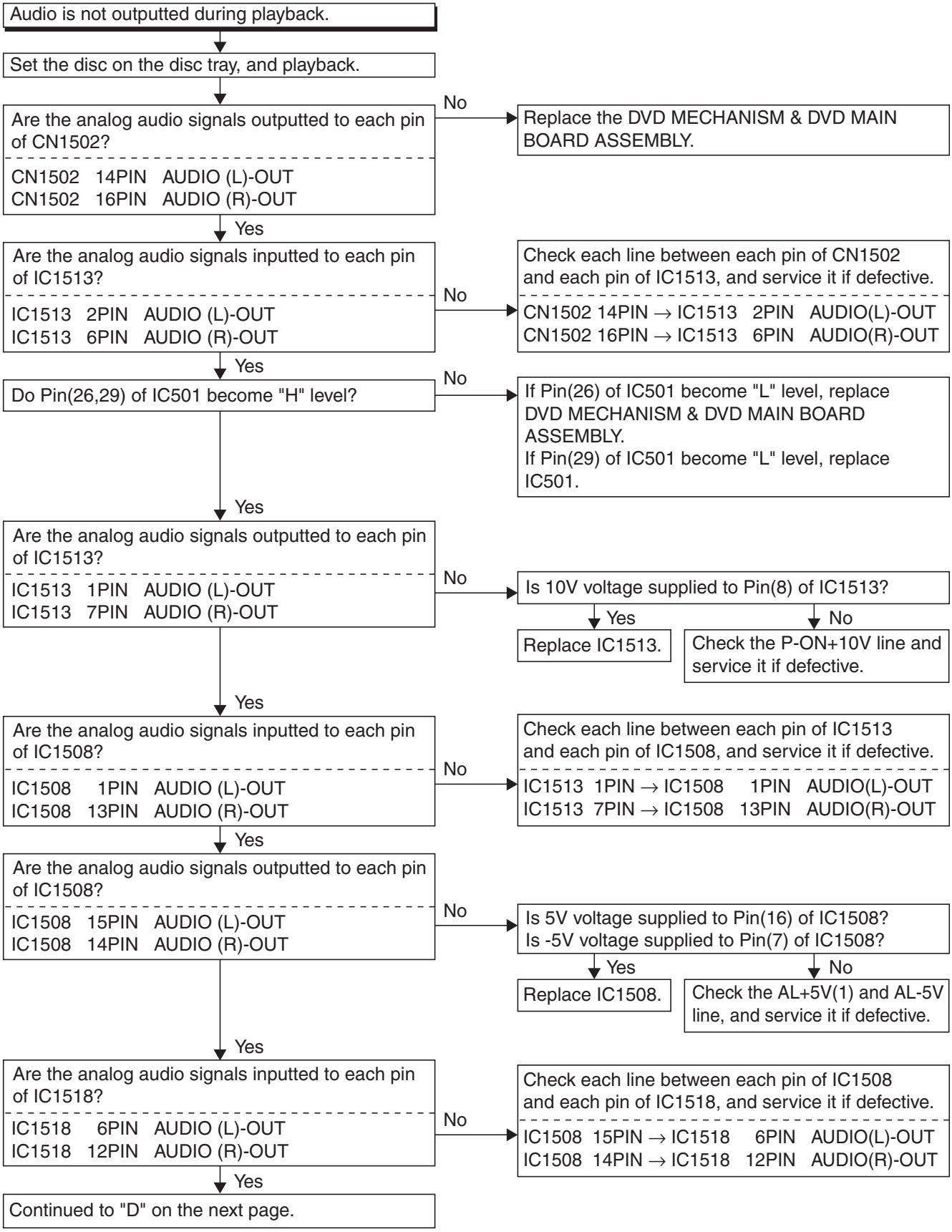

"C1"
Are the video signals inputted to each pin of IC1516 and each pin of IC1514?
(Output to JK1501)
IC1516 3PIN VIDEO-Y(I/P)-OUT
IC1516 8PIN VIDEO-Cr/Pr-OUT
IC1516 6PIN VIDEO-Cb/Pb-OUT
(Output to JK1502)
IC1514 6PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1514 8PIN VIDEO-Cr/Pr-OUT/VIDEO-R-IN
IC1514 1PIN VIDEO-Cb/Pb-OUT/VIDEO-B-IN
No
Check the line between each pin of IC1516 and each pin of IC1510, and service it if defective.
IC1516 3PIN → IC1510 13PIN VIDEO-Y(I/P)-OUT
IC1516 8PIN → IC1510 3PIN VIDEO-Cr/Pr-OUT
IC1516 6PIN → IC1510 1PIN VIDEO-Cb/Pb-OUT
No
Check the line between each pin of IC1514 and each pin of IC1509, and service it if defective.
IC1514 6PIN → IC1509 15PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1514 8PIN → IC1509 14PIN VIDEO-Cr/Pr-OUT/VIDEO-R-IN
IC1514 1PIN → IC1509 4PIN VIDEO-Cb/Pb-OUT/VIDEO-B-IN
Yes
Are the video signals inputted to each pin of IC1516 and each pin of IC1514?
(Output to JK1501)
IC1516 13PIN VIDEO-Y(I/P)-OUT
IC1516 10PIN VIDEO-Cr/Pr-OUT
IC1516 11PIN VIDEO-Cb/Pb-OUT
(Output to JK1502)
IC1514 11PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1514 10PIN VIDEO-Cr/Pr-OUT/VIDEO-R-IN
IC1514 5PIN VIDEO-Cb/Pb-OUT/VIDEO-B-IN
No
Is 5V voltage supplied to Pin(4,12) of IC1516?
No
Replace IC1516.
Yes
Check the DVD-P-ON+5V line, and service it if defective.
No
Is 5V voltage supplied to Pin(4,12) of IC1514?
No
Replace IC1514.
Yes
Check the DVD-P-ON+5V line, and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the component video signals outputted to COMPONENT OUT terminal (JK1501)?
No
Check the periphery of JK1501 from Pin (10,11,13) of IC1516 and service it if defective.
Are the component video and RGB video signals outputted to VIDEO OUT (AV1) terminal (JK1502)?
No
Check the periphery of JK1502 from Pin (10,11,15) of IC1514 and service it if defective.

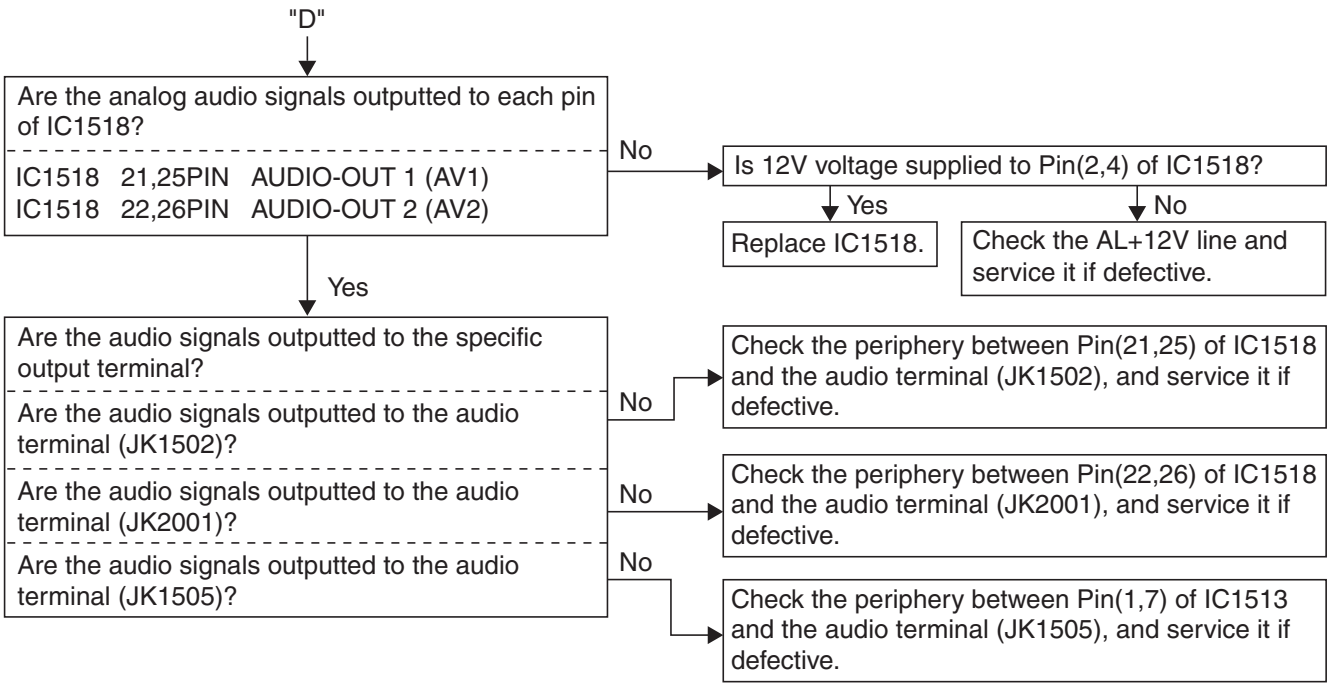
FLOW CHART NO.7


Audio E-E does not appear normally.
Are the audio signals inputted to each pin of IC1518?
IC1518 10,16PIN AUDIO-IN1 (AV1)
IC1518 8,14PIN AUDIO-IN2 (AV2)
IC1518 20,24PIN TUNER-AUDIO
No (Rear or Front input)
Check the line between audio input terminal and each pin of IC1518, and service it if defective.
IC1518 10,16PIN→JK1502 AUDIO-IN1 (AV1)
IC1518 8,14PIN→JK2001 AUDIO-IN2 (AV2)
No (Tuner)
Is SIF signal inputted to Pin(2) of IC1?
Yes
No
Replace TU1501.
Are the audio signal outputted to Pin(30,31) of IC1?
Yes
No
Check the line between Pin(30,31) of IC1 and Pin(20,24) of IC1518, and service it if defective.
Replace IC1.
Yes
Are the audio signals outputted to Pin(23,27) of IC1518?
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V(1) line and service it if defective.
Yes
Are the audio signals inputted to each pin of IC1501?
IC1501 1,12PIN TUNER-AUDIO/AUDIO-IN1,2
IC1501 5,14PIN AUDIO-IN-F (FRONT)
No
Check the line between Pin (1,12) of IC1501 and Pin (23,27) of IC1518, and service it if defective.
No
Check the line between Pin (5,14) of IC1501 and audio input terminal (JK1202, JK1203), and service it if defective.
Yes
Are the audio signals outputted to Pin(3,13) of IC1501?
No
Is 5V voltage supplied to Pin(16) of IC1501?
Is -5V voltage supplied to Pin(7) of IC1501?
Yes
No
Replace IC1501.
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Are the audio signals outputted to Pin(1,7) of IC1506?
No
Replace IC1506.
Yes
Are the analog audio signals outputted to each pin of CN1502?
CN1502 14PIN AUDIO (L)-OUT
CN1502 16PIN AUDIO (R)-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Continued to "C" on the next page.


"C"
Are the analog audio signals inputted to each pin of IC1513?
IC1513 2PIN AUDIO (L)-OUT
IC1513 6PIN AUDIO (R)-OUT
No
Check each line between each pin of CN1502 and each pin of IC1513, and service it if defective.
CN1502 14PIN → IC1513 2PIN AUDIO(L)-OUT
CN1502 16PIN → IC1513 6PIN AUDIO(R)-OUT
Yes
Do Pin(26,29) of IC501 become "H" level?
No
If Pin(26) of IC501 become "L" level, replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
If Pin(29) of IC501 become "L" level, replace IC501.
Yes
Are the analog audio signals outputted to each pin of IC1513?
IC1513 1PIN AUDIO (L)-OUT
IC1513 7PIN AUDIO (R)-OUT
No
Is 10V voltage supplied to Pin(8) of IC1513?
Yes
Replace IC1513.
No
Check the P-ON+10V line and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1508?
IC1508 1PIN AUDIO (L)-OUT
IC1508 13PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1513 and each pin of IC1508, and service it if defective.
IC1513 1PIN → IC1508 1PIN AUDIO(L)-OUT
IC1513 7PIN → IC1508 13PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1508?
IC1508 15PIN AUDIO (L)-OUT
IC1508 14PIN AUDIO (R)-OUT
No
Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?
Yes
Replace IC1508.
No
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1518?
IC1518 6PIN AUDIO (L)-OUT
IC1518 12PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1508 and each pin of IC1518, and service it if defective.
IC1508 15PIN → IC1518 6PIN AUDIO(L)-OUT
IC1508 14PIN → IC1518 12PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1518?
IC1518 21,25PIN AUDIO-OUT 1 (AV1)
IC1518 22,26PIN AUDIO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
Replace IC1518.
No
Check the AL+12V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1502)?
Are the audio signals outputted to the audio terminal (JK2001)?
Are the audio signals outputted to the audio terminal (JK1505)?
No
Check the periphery between Pin(21,25) of IC1518 and the audio terminal (JK1502), and service it if defective.
No
Check the periphery between Pin(22,26) of IC1518 and the audio terminal (JK2001), and service it if defective.
No
Check the periphery between Pin(1,7) of IC1513 and the audio terminal (JK1505), and service it if defective.

FLOW CHART NO.8


Audio is not outputted during playback.
Set the disc on the disc tray, and playback.
Are the analog audio signals outputted to each pin of CN1502?
CN1502 14PIN AUDIO (L)-OUT
CN1502 16PIN AUDIO (R)-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the analog audio signals inputted to each pin of IC1513?
IC1513 2PIN AUDIO (L)-OUT
IC1513 6PIN AUDIO (R)-OUT
No
Check each line between each pin of CN1502 and each pin of IC1513, and service it if defective.
CN1502 14PIN → IC1513 2PIN AUDIO(L)-OUT
CN1502 16PIN → IC1513 6PIN AUDIO(R)-OUT
Yes
Do Pin(26,29) of IC501 become "H" level?
No
If Pin(26) of IC501 become "L" level, replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
If Pin(29) of IC501 become "L" level, replace IC501.
Yes
Are the analog audio signals outputted to each pin of IC1513?
IC1513 1PIN AUDIO (L)-OUT
IC1513 7PIN AUDIO (R)-OUT
No
Is 10V voltage supplied to Pin(8) of IC1513?
Yes
Replace IC1513.
No
Check the P-ON+10V line and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1508?
IC1508 1PIN AUDIO (L)-OUT
IC1508 13PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1513 and each pin of IC1508, and service it if defective.
IC1513 1PIN → IC1508 1PIN AUDIO(L)-OUT
IC1513 7PIN → IC1508 13PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1508?
IC1508 15PIN AUDIO (L)-OUT
IC1508 14PIN AUDIO (R)-OUT
No
Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?
Yes
Replace IC1508.
No
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1518?
IC1518 6PIN AUDIO (L)-OUT
IC1518 12PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1508 and each pin of IC1518, and service it if defective.
IC1508 15PIN → IC1518 6PIN AUDIO(L)-OUT
IC1508 14PIN → IC1518 12PIN AUDIO(R)-OUT
Yes
Continued to "D" on the next page.


"D"
Are the analog audio signals outputted to each pin of IC1518?
IC1518 21,25PIN AUDIO-OUT 1 (AV1)
IC1518 22,26PIN AUDIO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1502)?
No
Check the periphery between Pin(21,25) of IC1518 and the audio terminal (JK1502), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the periphery between Pin(22,26) of IC1518 and the audio terminal (JK2001), and service it if defective.
Are the audio signals outputted to the audio terminal (JK1505)?
No
Check the periphery between Pin(1,7) of IC1513 and the audio terminal (JK1505), and service it if defective.

3 VCR Section

FLOW CHART NO.1

The key operation is not functioning.

↓

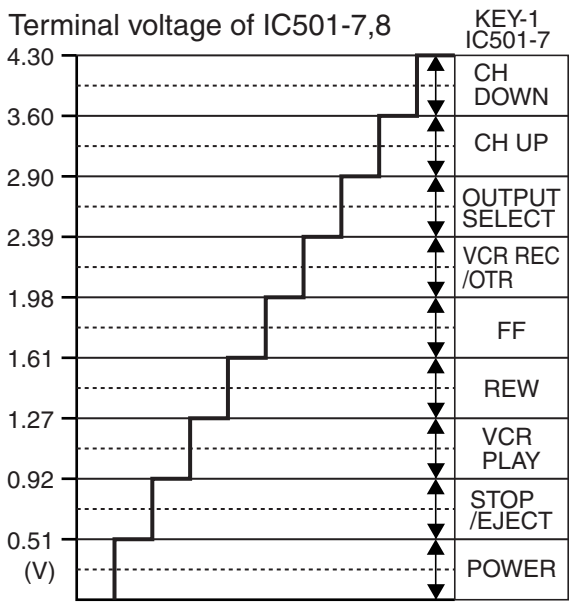
Are the contact point and the installation state of the key switches normal? — No → Re-install some key switches correctly or replace some key switches.

↓ Yes

Is the control voltage normally inputted into Pin(7) of IC501? — No → Check the key switches and their periphery, and service it if defective.

↓ Yes

Replace IC501.



FLOW CHART NO.2

No VCR operation is possible from the remote control unit. (Operation is possible from the unit.)

↓

Is 5V voltage supplied to the Pin(3) terminal of the RM1501 (remote control receiver)? — No → Check AL+5V line and service it if defective.

↓ Yes

Is the "L" pulse sent out from Pin(1) terminal of the RM1501 (remote control receiver) when the remote control unit is activated? — No → Replace the RM1501 (remote control receiver). Replace remote control unit if need.

↓ Yes

Is the "L" pulse signal supplied to Pin(14) of IC501? — No → Check the line between the RM1501 (remote control receiver) and Pin(14) of IC501, and service it if defective.

↓ Yes

Replace IC501.

FLOW CHART NO.3

Cassette tape can not be loaded.

↓

When loading a cassette tape, on Pin(10) of IC501, does the "L" pulse switch to the "H" pulse? — No → Check the line between the start sensor and Pin(10) of IC501, and service it if defective.

↓ Yes

When loading a cassette tape, is the specified voltage (approximately 13V) outputted to the terminal of the Loading Motor Unit? — No → Replace the Capstan Motor Unit.

↓ Yes

Replace the Loading Motor Unit.

FLOW CHART NO.4

Cassette tape is ejected right after the loading.

↓

When loading a cassette tape, on Pin(10) of IC501, does the "L" pulse switch to the "H" pulse? — No → Check the line between the start sensor and Pin(10) of IC501, and service it if defective.

↓ Yes

When loading a cassette tape, on Pin(4) of IC501, does the "L" pulse switch to the "H" pulse? — No → Check the line between the end sensor and Pin(4) of IC501, and service it if defective.

↓ Yes

When loading a cassette tape, does the LD-SW operate normally? — No → Check the line between the LD-SW(SW507) and Pin(9) of IC501, and service it if defective.

↓ Yes

Replace IC501.

FLOW CHART NO.5

Cassette tape can not be ejected.

↓

When pressing the eject button, does the Capstan Motor start rotating? — No → Refer to "FLOW CHART NO.6 " <The Capstan Motor does not rotate>.

↓ Yes

While the Capstan Motor is rotating, is the Takeup Reel rotating? — No → Check the Reel Disc or Clutch Assembly, and service it if defective.

↓ Yes

While the Takeup Reel is rotating, is the reel pulse signal inputted to Pin(80) of IC501? — No → Check the line between the Takeup Reel sensor and Pin(80) of IC501, and service it if defective.

↓ Yes

While the reel pulse signal is inputting, is "L" pulse outputted to Pin(81) of IC501? — No → Replace IC501.

↓ Yes

Is the specified voltage (approximately 13V) outputted to the terminal of the Lading Motor Unit? — No → Replace the Capstan Motor unit.

↓ Yes

Is the Loading Motor rotating? — No → Replace the Loading Motor unit.

↓ Yes

Check the Cam Gear or Rack Assembly, etc., and service it if defective.

FLOW CHART NO.6

Capstan Motor does not rotate.

↓

Is 5V voltage supplied to Pin(2) of CN502? — No → Check the P-ON+5V line and service it if defective.

↓ Yes

Is over approximately 2.6V voltage supplied to Pin(5) of CN502? — No → Check the line between Pin(5) of CN502 and Pin(76) of IC501, and service it if defective.

↓ Yes

Is 12V voltage supplied to Pin(1,11) of CN502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit.

FLOW CHART NO.7

Drum Motor does not rotate.

↓

Is 5V voltage supplied to Pin(2) of CN502? — No → Check the P-ON+5V line and service it if defective.

↓ Yes

Is over approximately 2.6V voltage supplied to Pin(8) of CN502? — No → Check the line between Pin(8) of CN502 and Pin(77) of IC501, and service it if defective.

↓ Yes

Is 12V voltage supplied at Pin(1,11) of CN502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit or Cylinder Assembly.

FLOW CHART NO.8

Drum Motor rotates only for a few seconds.

↓

Is the drum PG/FG signal inputted to Pin(90) of IC501? — No → Replace the Capstan Motor Unit or the Cylinder Assembly.

↓ Yes

Is the RF-SW signal outputted to Pin(18) of IC501? — No → Replace IC501.

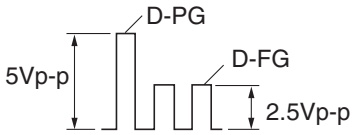
↓ Yes

Is 12V voltage supplied Pin(1,11) of CN 502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit or the Cylinder Assembly.

FLOW CHART NO.9



RF-SW signal is not outputted.

↓

Is the Drum Motor rotating? — No → Refer to "FLOW CHART NO.7" <Drum Motor does not rotate> and "FLOW CHART NO.8" <Drum Motor rotates only for a few seconds>.

↓ Yes

Is the drum PG/FG signal inputted to Pin(90) of IC501? — No → Replace the Capstan Motor Unit or the Cylinder Assembly.

↓ Yes

Replace IC501.

FLOW CHART NO.10

Video E-E does not appear.

Are the video signals inputted to each pin of IC1518?

IC1518 1PIN VIDEO-IN (AV1)
IC1518 3PIN VIDEO-IN2 (AV2)
IC1518 28PIN TUNER-VIDEO

No → Check the line between video input terminal and each pin of IC1518.

IC1581 1PIN → JK1502 VIDEO-IN (AV1)
IC1581 3PIN → JK2001 VIDEO-IN2 (AV1)
IC1581 28PIN → TU1501 17PIN TUNER-VIDEO

Yes

Are the video signals outputted to Pin(31) of IC1518?

No → Is 12V voltage supplied to Pin(2,4) of IC1518?

No → Replace IC1518.

Yes → Check AL+12V(I) line and service it if defective.

Yes

Are the video signals inputted to each pin of IC1507?

IC1507 12PIN TUNER/LINE VIDEO
IC1507 15PIN FRONT-Y-IN
IC1507 4PIN FRONT-C-IN
IC1507 10PIN FRONT-VIDEO-IN

No → Check the line between each pin of IC1507 and Pin(31) of IC1518 and video input terminal.

IC1507 12PIN → IC1518 31PIN TUNER/LINE VIDEO
IC1507 15PIN → JK1204 FRONT-Y-IN
IC1507 4PIN → JK1204 FRONT-C-IN
IC1507 10PIN → JK1201 FRONT-VIDEO-IN

Yes

Are the video signals outputted to Pin(20) of IC1507?

No → Is 5V voltage supplied to Pin(1) of IC1507?

Yes → Replace IC1507.

No → Check the DVD-P-ON+5V line and service it if defective.

Yes

Is the video signal inputted to Pins(48) of IC301?

No → Check the line between Pin(20) of IC1507 and Pin(48) of IC301, and service it if defective.

Yes

Is the C-SYNC signal outputted to Pin(67) of IC301?

Yes

Is the C-SYNC signal inputted to Pin(58) of IC501?

Yes

No → Check the line between Pin(67) of IC301 and Pin(58) of IC501, and service it if defective.

No

Is 5V voltage supplied to Pins(18,24,42,55,72) of IC301?

Yes

No → Check the P-ON+5V line and AL+5V line, and service it if defective.

Yes → Is the serial data and clock signal supplied to Pins(68,69) of IC301?

Yes → Replace IC301.

No → Check the line between Pins(68,69) of IC301 and Pins(71, 72) of IC501, and service it if defective.

Is the video signal inputted into Pin(5) of IC1508?

No → Check the line between Pin(65) of IC301 and Pin(5) of IC1508, and service it if defective.

Yes

Is the video signal outputted to Pin(4) of IC1508?

Yes → Is 5V voltage supplied to Pin(1) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?

Yes → Replace IC1508.

No → Check the AL+5V(1) and AL-5V line, and service it if defective.

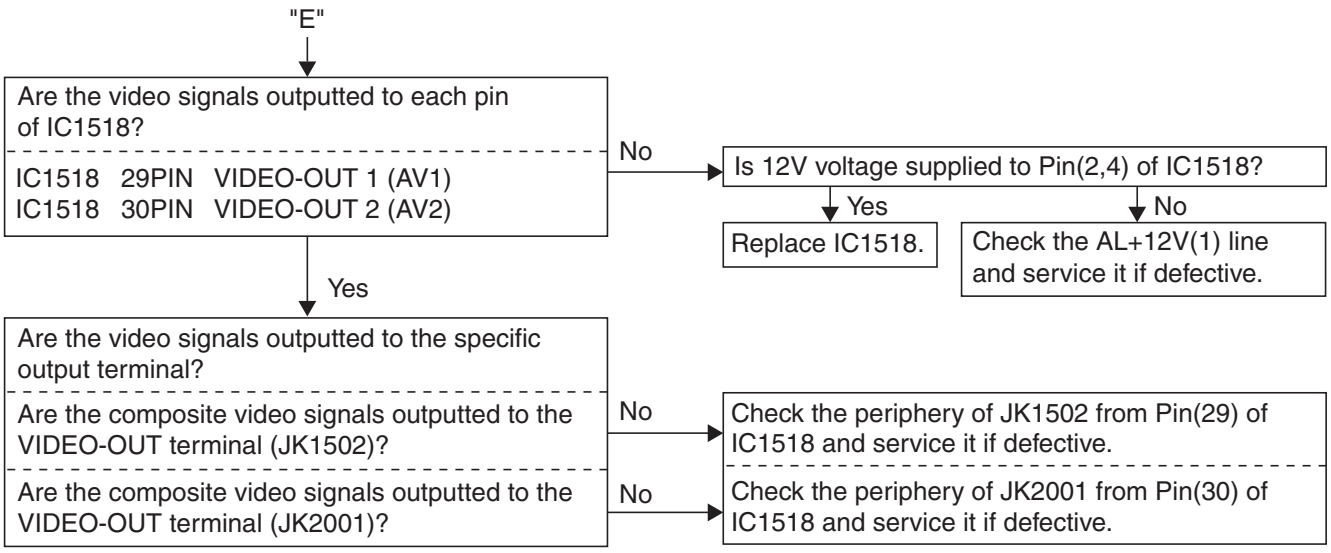
No

Is the video signal inputted to Pin(5) of IC1518?

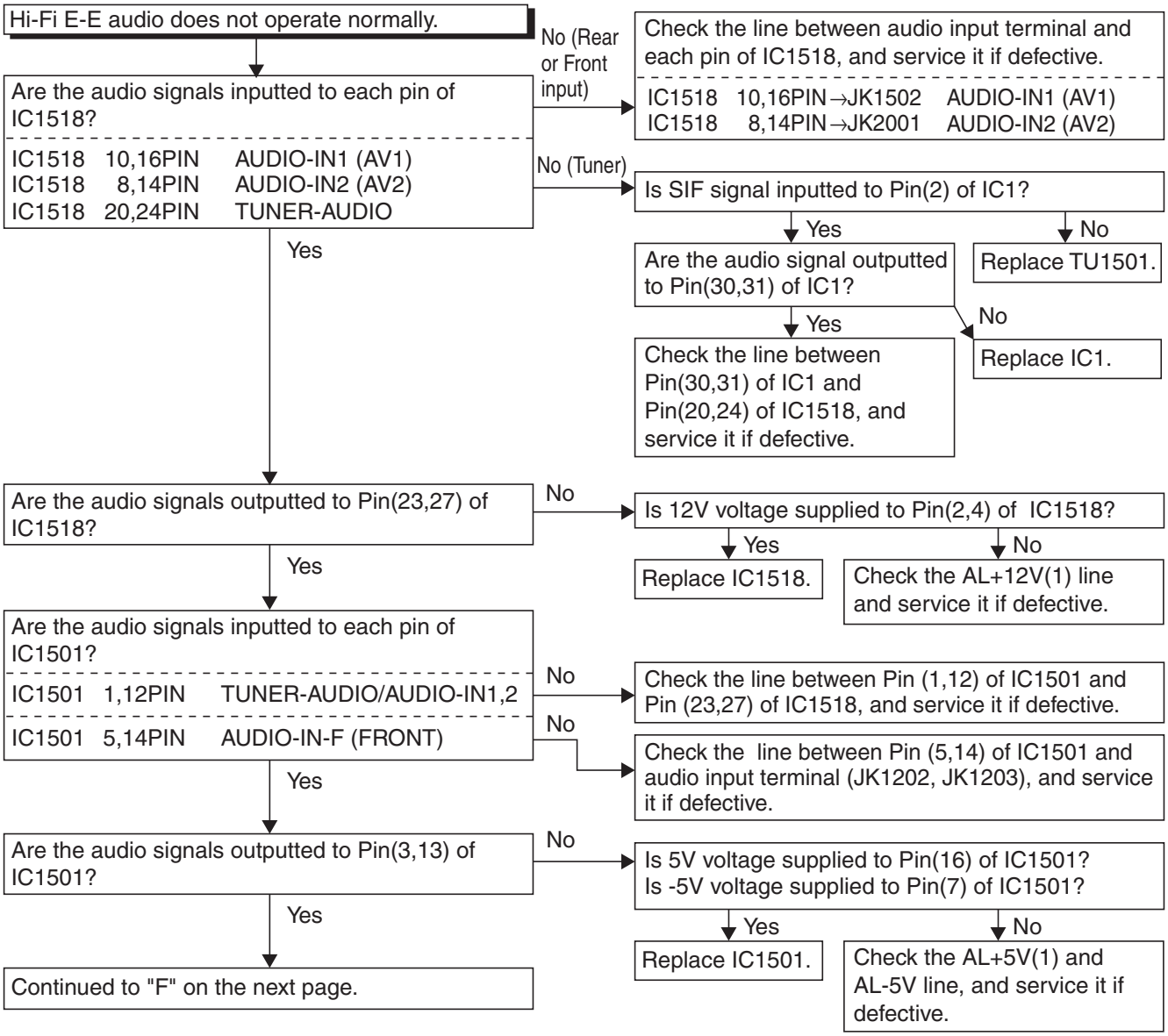
No → Check the line between Pin(4) of IC1508 and Pin(5) of IC1518, and service it if defective.

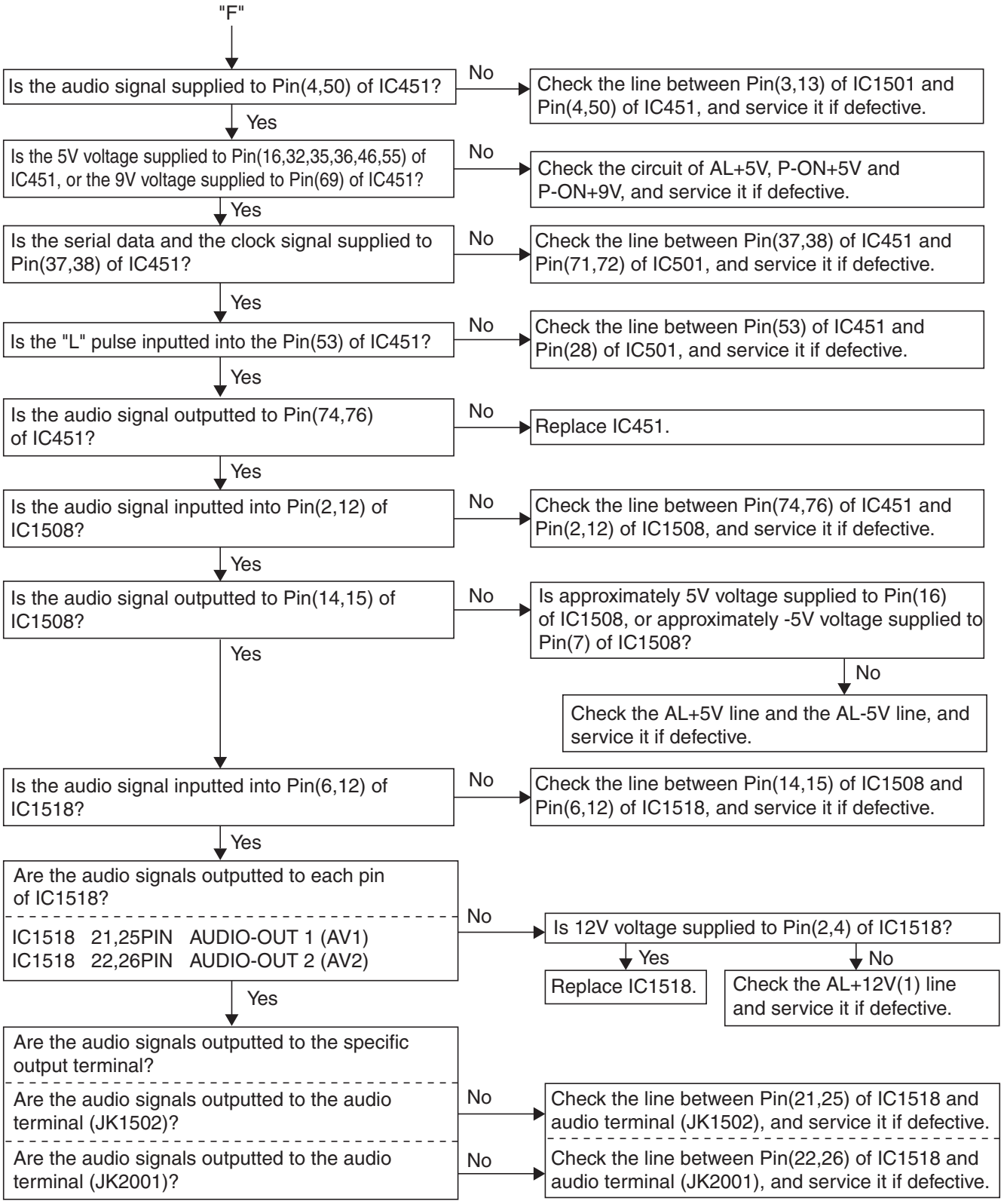
Yes

Continued to "E" on the next page.

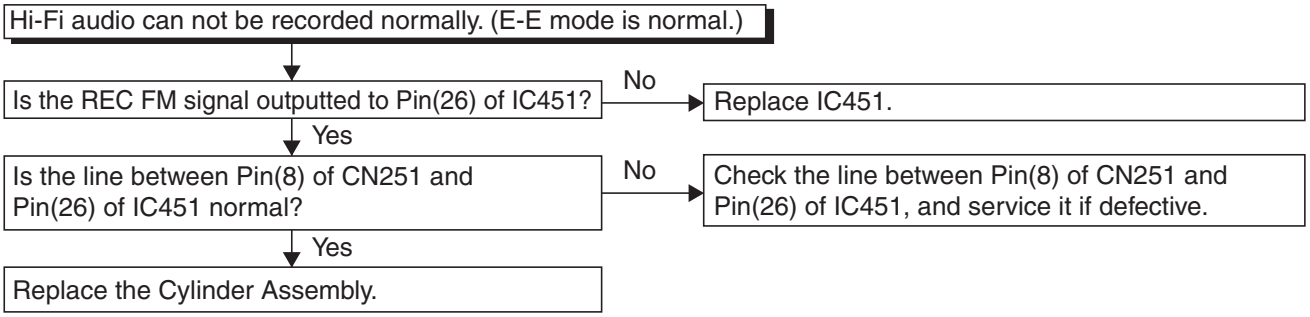

"E"
Are the video signals outputted to each pin of IC1518?
IC1518 29PIN VIDEO-OUT 1 (AV1)
IC1518 30PIN VIDEO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V(1) line and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the composite video signals outputted to the VIDEO-OUT terminal (JK1502)?
No
Check the periphery of JK1502 from Pin(29) of IC1518 and service it if defective.
Are the composite video signals outputted to the VIDEO-OUT terminal (JK2001)?
No
Check the periphery of JK2001 from Pin(30) of IC1518 and service it if defective.

FLOW CHART NO.11

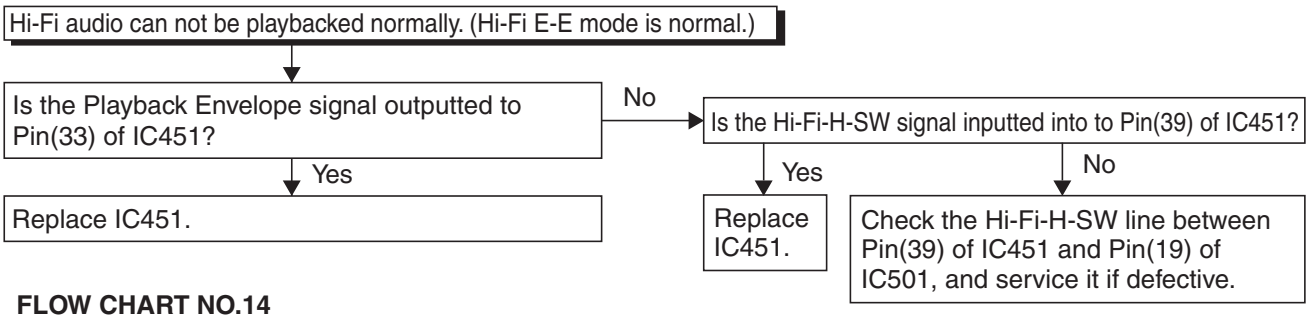

Hi-Fi E-E audio does not operate normally.
Are the audio signals inputted to each pin of IC1518?
IC1518 10,16PIN AUDIO-IN1 (AV1)
IC1518 8,14PIN AUDIO-IN2 (AV2)
IC1518 20,24PIN TUNER-AUDIO
No (Rear or Front input)
Check the line between audio input terminal and each pin of IC1518, and service it if defective.
IC1518 10,16PIN→JK1502 AUDIO-IN1 (AV1)
IC1518 8,14PIN→JK2001 AUDIO-IN2 (AV2)
No (Tuner)
Is SIF signal inputted to Pin(2) of IC1?
Yes
No
Replace TU1501.
Are the audio signal outputted to Pin(30,31) of IC1?
Yes
No
Replace IC1.
Check the line between Pin(30,31) of IC1 and Pin(20,24) of IC1518, and service it if defective.
Yes
Are the audio signals outputted to Pin(23,27) of IC1518?
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V(1) line and service it if defective.
Yes
Are the audio signals inputted to each pin of IC1501?
IC1501 1,12PIN TUNER-AUDIO/AUDIO-IN1,2
IC1501 5,14PIN AUDIO-IN-F (FRONT)
No
Check the line between Pin (1,12) of IC1501 and Pin (23,27) of IC1518, and service it if defective.
No
Check the line between Pin (5,14) of IC1501 and audio input terminal (JK1202, JK1203), and service it if defective.
Yes
Are the audio signals outputted to Pin(3,13) of IC1501?
No
Is 5V voltage supplied to Pin(16) of IC1501?
Is -5V voltage supplied to Pin(7) of IC1501?
Yes
No
Replace IC1501.
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Continued to "F" on the next page.


"F"
Is the audio signal supplied to Pin(4,50) of IC451?
No
Check the line between Pin(3,13) of IC1501 and Pin(4,50) of IC451, and service it if defective.
Yes
Is the 5V voltage supplied to Pin(16,32,35,36,46,55) of IC451, or the 9V voltage supplied to Pin(69) of IC451?
No
Check the circuit of AL+5V, P-ON+5V and P-ON+9V, and service it if defective.
Yes
Is the serial data and the clock signal supplied to Pin(37,38) of IC451?
No
Check the line between Pin(37,38) of IC451 and Pin(71,72) of IC501, and service it if defective.
Yes
Is the "L" pulse inputted into the Pin(53) of IC451?
No
Check the line between Pin(53) of IC451 and Pin(28) of IC501, and service it if defective.
Yes
Is the audio signal outputted to Pin(74,76) of IC451?
No
Replace IC451.
Yes
Is the audio signal inputted into Pin(2,12) of IC1508?
No
Check the line between Pin(74,76) of IC451 and Pin(2,12) of IC1508, and service it if defective.
Yes
Is the audio signal outputted to Pin(14,15) of IC1508?
No
Is approximately 5V voltage supplied to Pin(16) of IC1508, or approximately -5V voltage supplied to Pin(7) of IC1508?
No
Check the AL+5V line and the AL-5V line, and service it if defective.
Yes
Is the audio signal inputted into Pin(6,12) of IC1518?
No
Check the line between Pin(14,15) of IC1508 and Pin(6,12) of IC1518, and service it if defective.
Yes
Are the audio signals outputted to each pin of IC1518?
IC1518 21,25PIN AUDIO-OUT 1 (AV1)
IC1518 22,26PIN AUDIO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
Replace IC1518.
No
Check the AL+12V(1) line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1502)?
No
Check the line between Pin(21,25) of IC1518 and audio terminal (JK1502), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the line between Pin(22,26) of IC1518 and audio terminal (JK2001), and service it if defective.

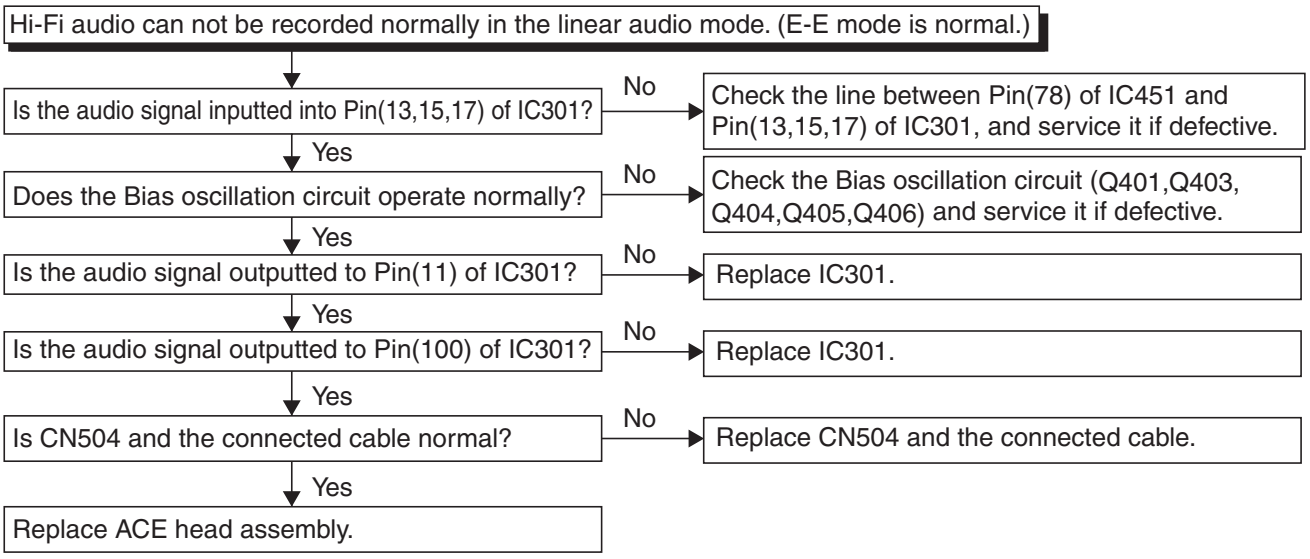
FLOW CHART NO.12


Hi-Fi audio can not be recorded normally. (E-E mode is normal.)
Is the REC FM signal outputted to Pin(26) of IC451?
No
Replace IC451.
Yes
Is the line between Pin(8) of CN251 and Pin(26) of IC451 normal?
No
Check the line between Pin(8) of CN251 and Pin(26) of IC451, and service it if defective.
Yes
Replace the Cylinder Assembly.

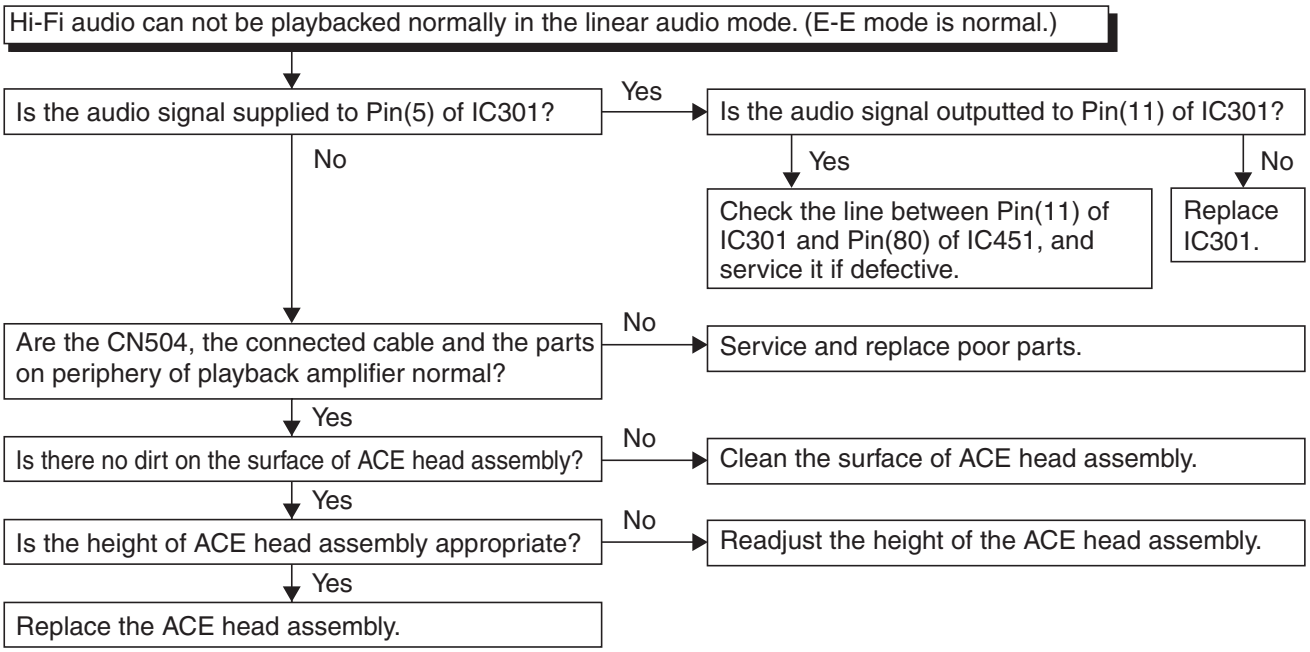
FLOW CHART NO.13


Hi-Fi audio can not be playbacked normally. (Hi-Fi E-E mode is normal.)
Is the Playback Envelope signal outputted to Pin(33) of IC451?
No
Is the Hi-Fi-H-SW signal inputted into to Pin(39) of IC451?
Yes
No
Yes
Replace IC451.
Replace IC451.
Check the Hi-Fi-H-SW line between Pin(39) of IC451 and Pin(19) of IC501, and service it if defective.

FLOW CHART NO.14


Hi-Fi audio can not be recorded normally in the linear audio mode. (E-E mode is normal.)
Is the audio signal inputted into Pin(13,15,17) of IC301?
No
Check the line between Pin(78) of IC451 and Pin(13,15,17) of IC301, and service it if defective.
Yes
Does the Bias oscillation circuit operate normally?
No
Check the Bias oscillation circuit (Q401,Q403, Q404,Q405,Q406) and service it if defective.
Yes
Is the audio signal outputted to Pin(11) of IC301?
No
Replace IC301.
Yes
Is the audio signal outputted to Pin(100) of IC301?
No
Replace IC301.
Yes
Is CN504 and the connected cable normal?
No
Replace CN504 and the connected cable.
Yes
Replace ACE head assembly.

FLOW CHART NO.15


Hi-Fi audio can not be playbacked normally in the linear audio mode. (E-E mode is normal.)
Is the audio signal supplied to Pin(5) of IC301?
Yes
Is the audio signal outputted to Pin(11) of IC301?
No
Yes
No
Check the line between Pin(11) of IC301 and Pin(80) of IC451, and service it if defective.
Replace IC301.
Are the CN504, the connected cable and the parts on periphery of playback amplifier normal?
No
Service and replace poor parts.
Yes
Is there no dirt on the surface of ACE head assembly?
No
Clean the surface of ACE head assembly.
Yes
Is the height of ACE head assembly appropriate?
No
Readjust the height of the ACE head assembly.
Yes
Replace the ACE head assembly.

FUNCTION INDICATOR SYMBOLS

< VCR Section >

Note:

If a mechanical malfunction occurs, the power is turned off. When the power comes on again after that by pressing [STANDBY-ON] button, an error message is displayed on the TV screen for 5 seconds.

MODE	INDICATOR ACTIVE
When reel or capstan mechanism is not functioning correctly	"⏏ R" is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	"⏏ T" is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	"⏏ C" is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	"⏏ D" is displayed on a TV screen. (Refer to Fig. 4.)
P-ON Power safety detection	"⏏ P" is displayed on a TV screen. (Refer to Fig. 5.)

TV screen

When reel or capstan mechanism is not functioning correctly

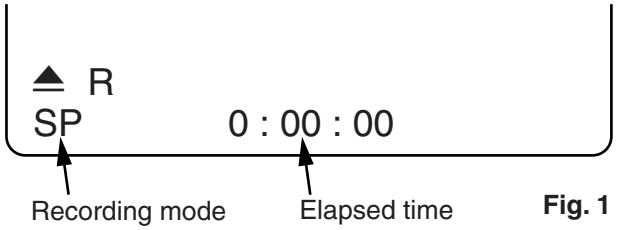


Fig. 1

When tape loading mechanism is not functioning correctly

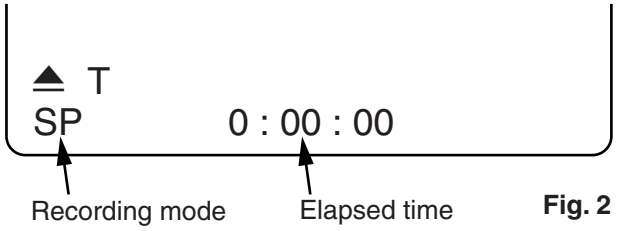


Fig. 2

When cassette loading mechanism is not functioning correctly

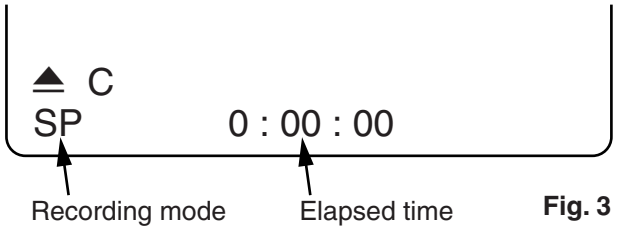


Fig. 3

When the drum is not working properly

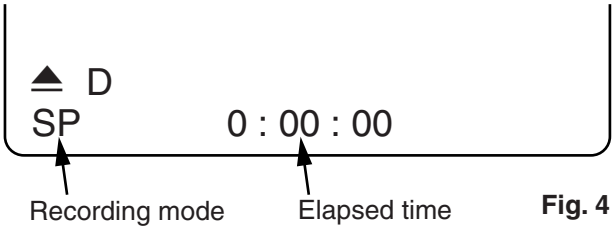


Fig. 4

P-ON Power safety detection

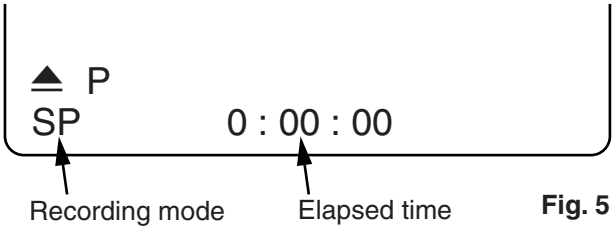
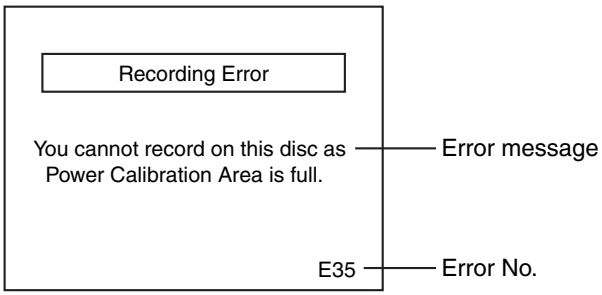


Fig. 5

< DVD Section >

Note: If an error occurs, a message with the error number appears on the screen.

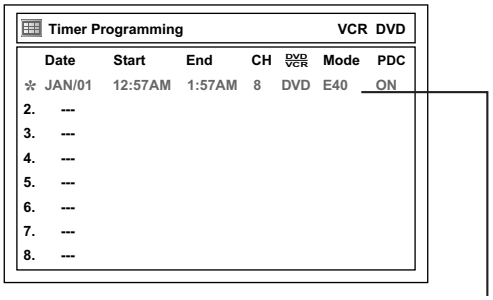


Message	Solution	Error No.	Error Description	Priority
Can not record on this disc.	Insert the recordable disc, and ensure the disc status satisfies the recording requirements.	1	An error occurs during data reading.	-
		2	There is no reply for 15 seconds in Test Unit Ready.	-
		3	Cannot write the data after trying three times.	-
		4	An error occurs with OPC.	-
		5	During recovery in a record.	-
		6	An error occurs even if recovery has been tried three times.	-
		7	An error occurs in a format.	-
		8	It cannot start an encode.	-
		9	NV_PCK/RDI_PCK is not in encoded data.	-
		10	Encode Pause condition continued for 10 minutes.	-
		11	Encode Pause condition continued in normal REC condition for 10 minutes.	-
		12	Difference in the address and can not get StreamID of RDI/VIDEO.	-
		13	It is a reply that “ATAPI is not readable.”	-
		14	Cannot write the data after recovering SMALL VMGI.	-
		15	Cannot write the data after DVD-R Reverse Track.	-
		16	An error occurs in Finalize Close.	-
		17	An error occurs in Rec Stop Close.	-
		18	An error occurs in PCA Full (DVD_R).	-
		19	Safety Stop occurs during editing.	-
		20	High Speed Disc.	2
		21	The disc is not formatted.	5
		22	Disc Error has occurred.	3
		23	The -R Disc of VR Mode.	6
		24	The disc except DVD-R/RW or finalized DVD-R.	1
This program is not allowed to be recorded.	You cannot record copy prohibited programs.	25	During the Macrovision picture input.	11
		26	During the CGMS picture input.	12
This program is not recordable in Video mode.	Set “DVD-RW Recording Format” to “VR mode”.	27	During the CGMS picture (possible to record once) input. (Video Format Disc)	12
This program is not allowed to be recorded on this disc.	Insert a ver.1.1 CPRM compatible DVD-RW disc.	28	During the CGMS picture (possible to record once) input. (Disc which is not for the correspondence to VR Format CPRM)	12

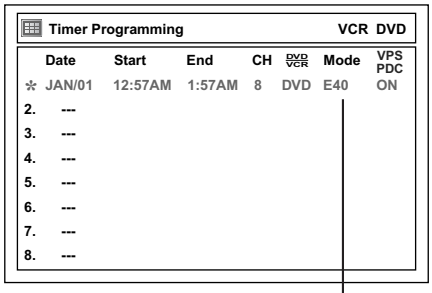
Message	Solution	Error No.	Error Description	Priority
This disc is protected and not recordable.	Release the disc protect setting in the Disc Setting menu.	29	Disc Protected Disc.	7
Disc is full. (No area for new recording)	Insert the recordable disc with enough recording space.	30	No available recording space.	5
You cannot record more than 99 titles on one disc. (The maximum is 99.)	Delete unnecessary titles.	31	Its recording capacity has been reached. (Video Format Disc)	7
		32	Its recording capacity has been reached. (VR Format Disc)	8
You cannot record more than 999 chapters on one disc. (The maximum is 999.)	Delete unnecessary chapter markers.	33	The 999 chapter has been reached. (VR Format Disc)	9
You cannot record on this disc as Control Information is full.	Delete unnecessary titles.	34	There is not space to record field of control information.	10
You cannot record on the disc as Power Calibration Area is full.	Insert a new disc.	35	PCA is Full. (in REC start)	4
This disc is already finalized.	Release the finalizing for this disc.	36	It is finalized. (Video Format Disc)	6
Can not record on this disc.	Repeat the same operation.	37	Access to Memory Area range outside.	-
		38	Sector Address is wrong.	-
		39	BUP writing error of chapter editing.	-

If an error occurs during the timer recording, one of the following error numbers (40 to 42) or the above error messages (error number: 1 to 39) is displayed on the recording menu after timer recording.
(Once the screen of the program line is exited, the program line for the error will be cleared.)
(No Error Message is displayed for the error No. 40 ~ 42.)

Example : D-VR16SB



Example : D-VR40SF



The speed mode changes to the error number.

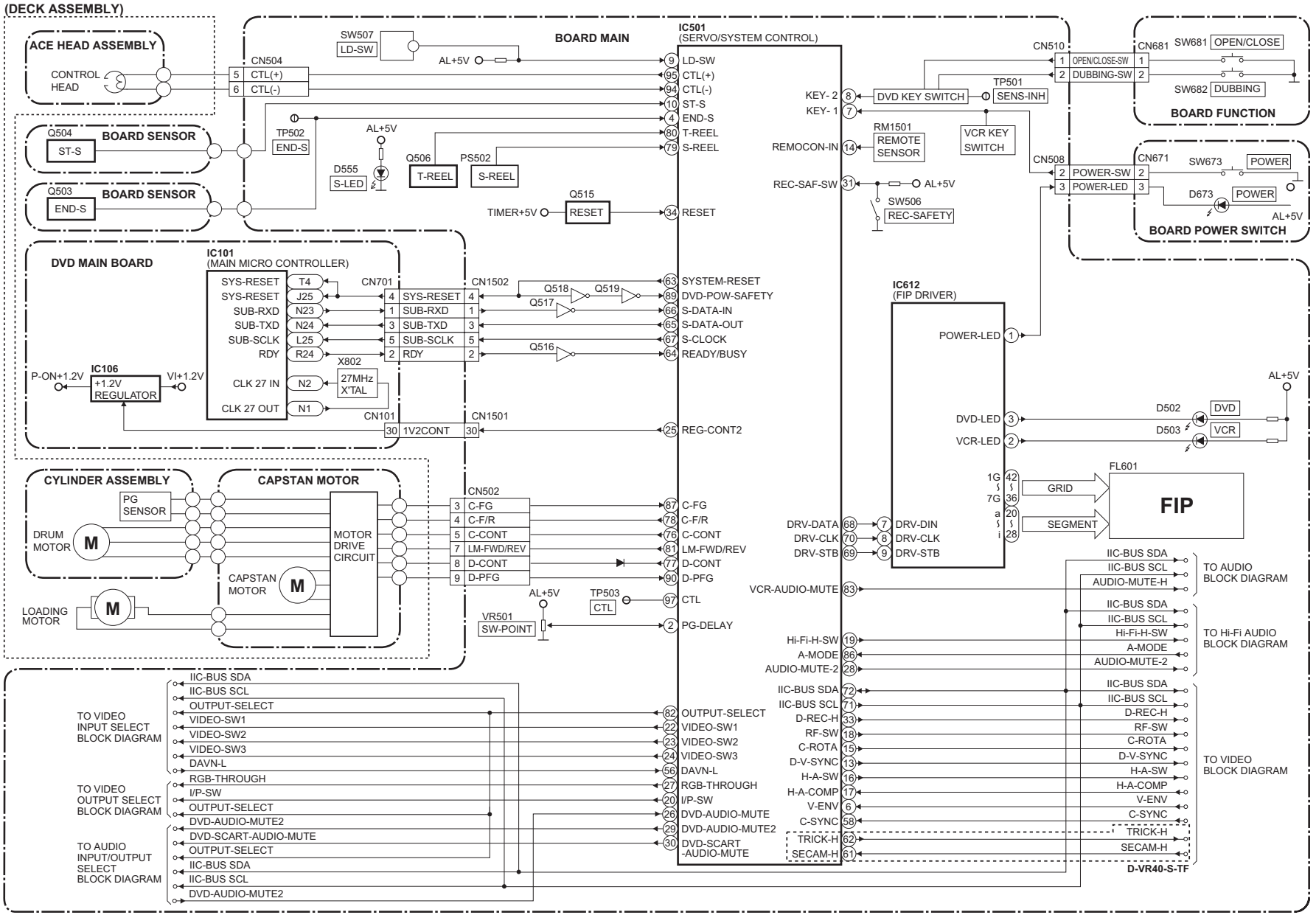
A program with the error number is grayed out and asterisked on the timer programming list.

Message	Solution	Error No.	Error Description	Priority
Error message is not displayed.	- Set the timer programming correctly. - Set the timer programming before the start time. - Insert a recordable videotape with a record tab.	40	- Some portion has not been recorded because of program overlapping. - Recording did not start at the start time. - No Videotape is inserted. Videotape ran out during recording.	-
	Turn the power on and set the clock correctly then set timer programming again.	41	Power failed	-
	Insert the recordable disc.	42	No disc when recording	-

BLOCK DIAGRAMS

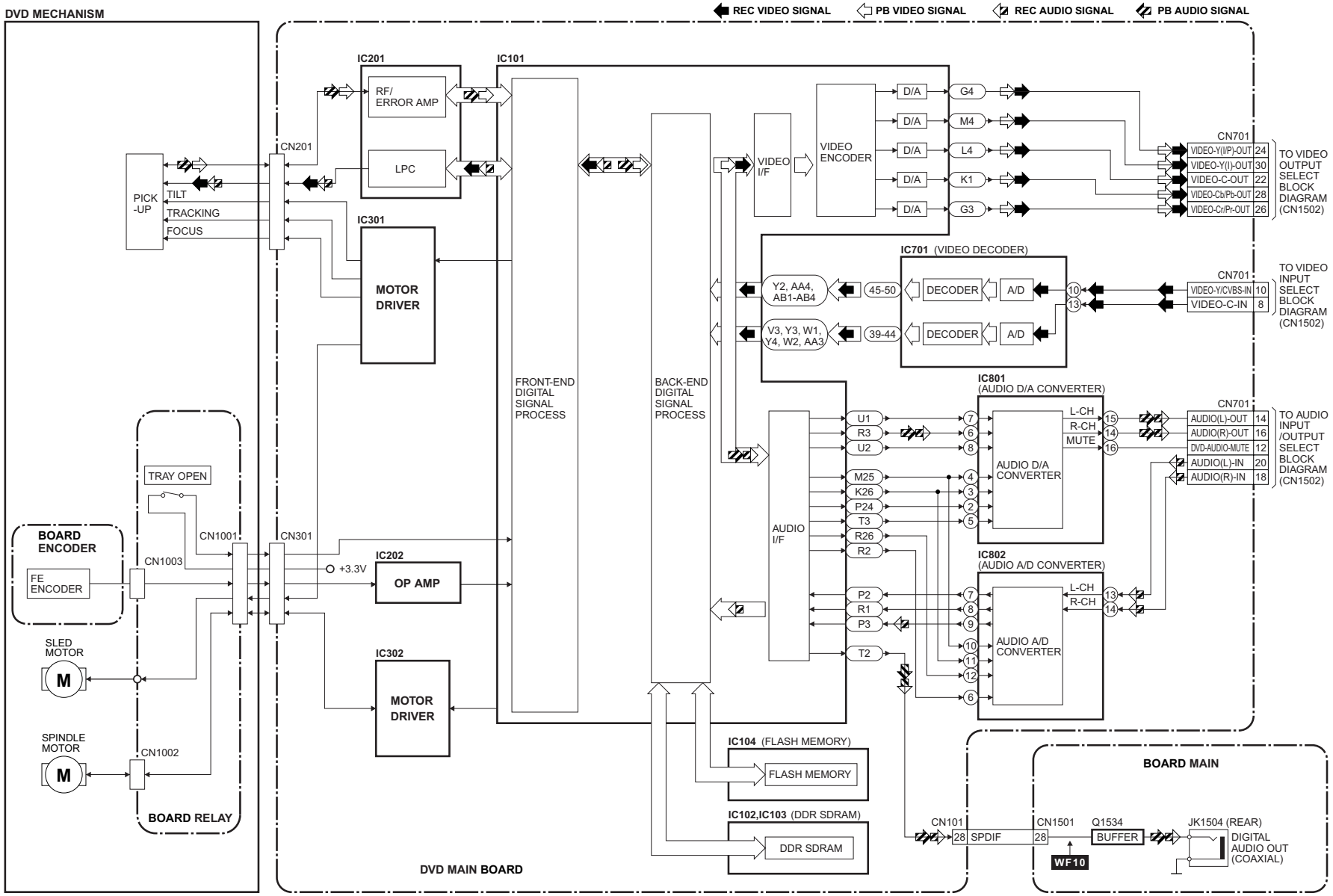
Servo/System Control Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



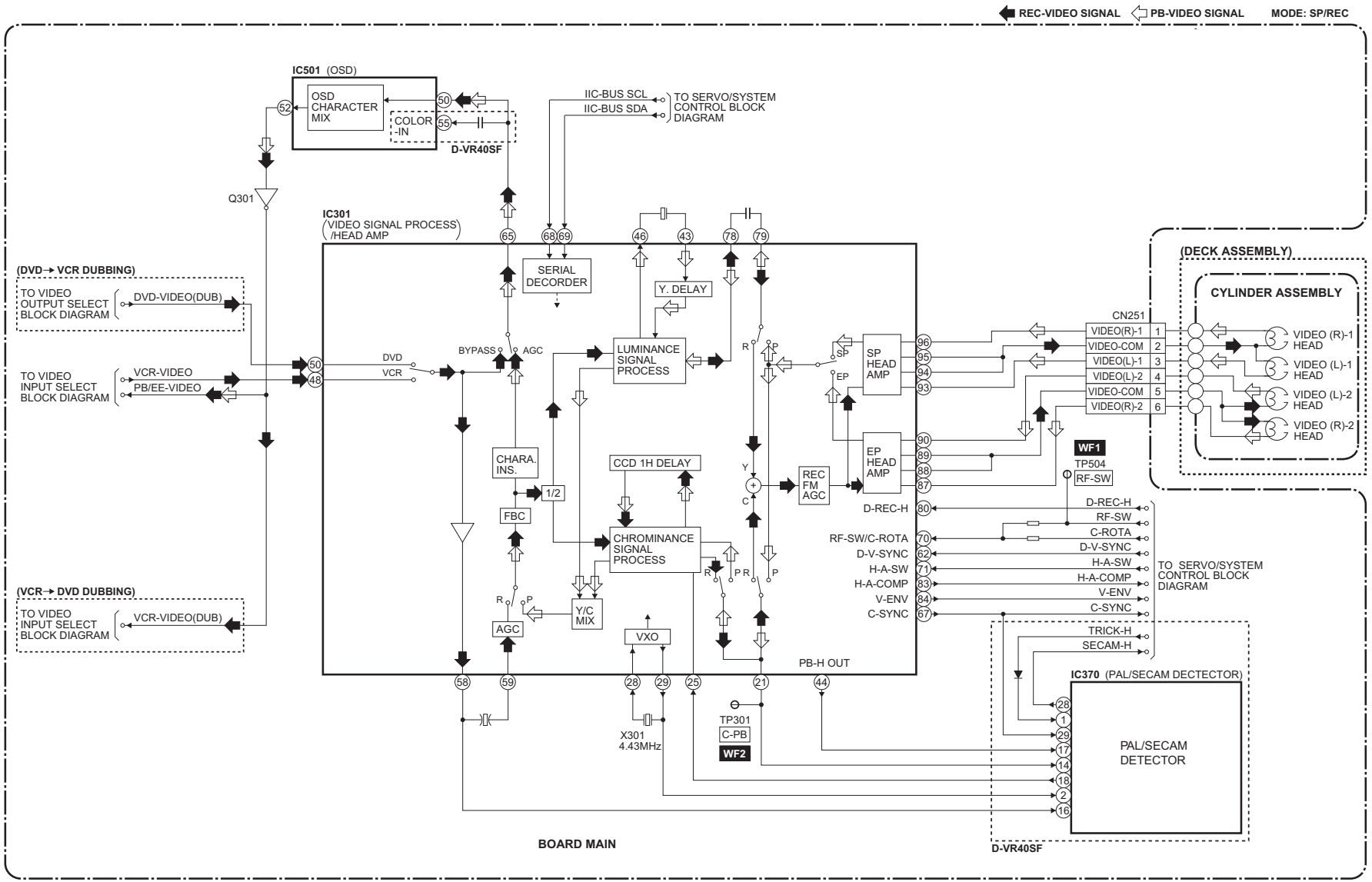
Digital Signal Process Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



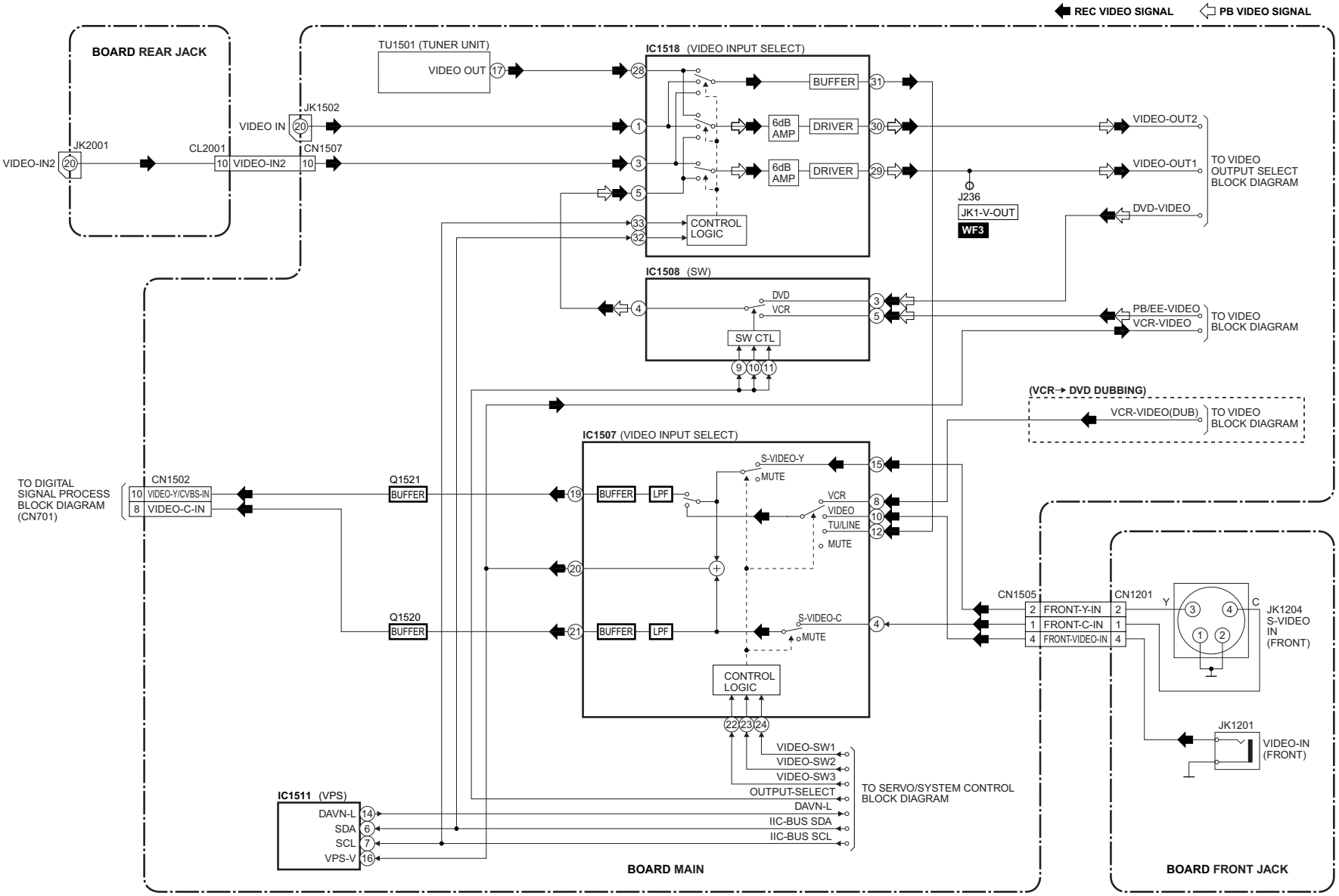
Video Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



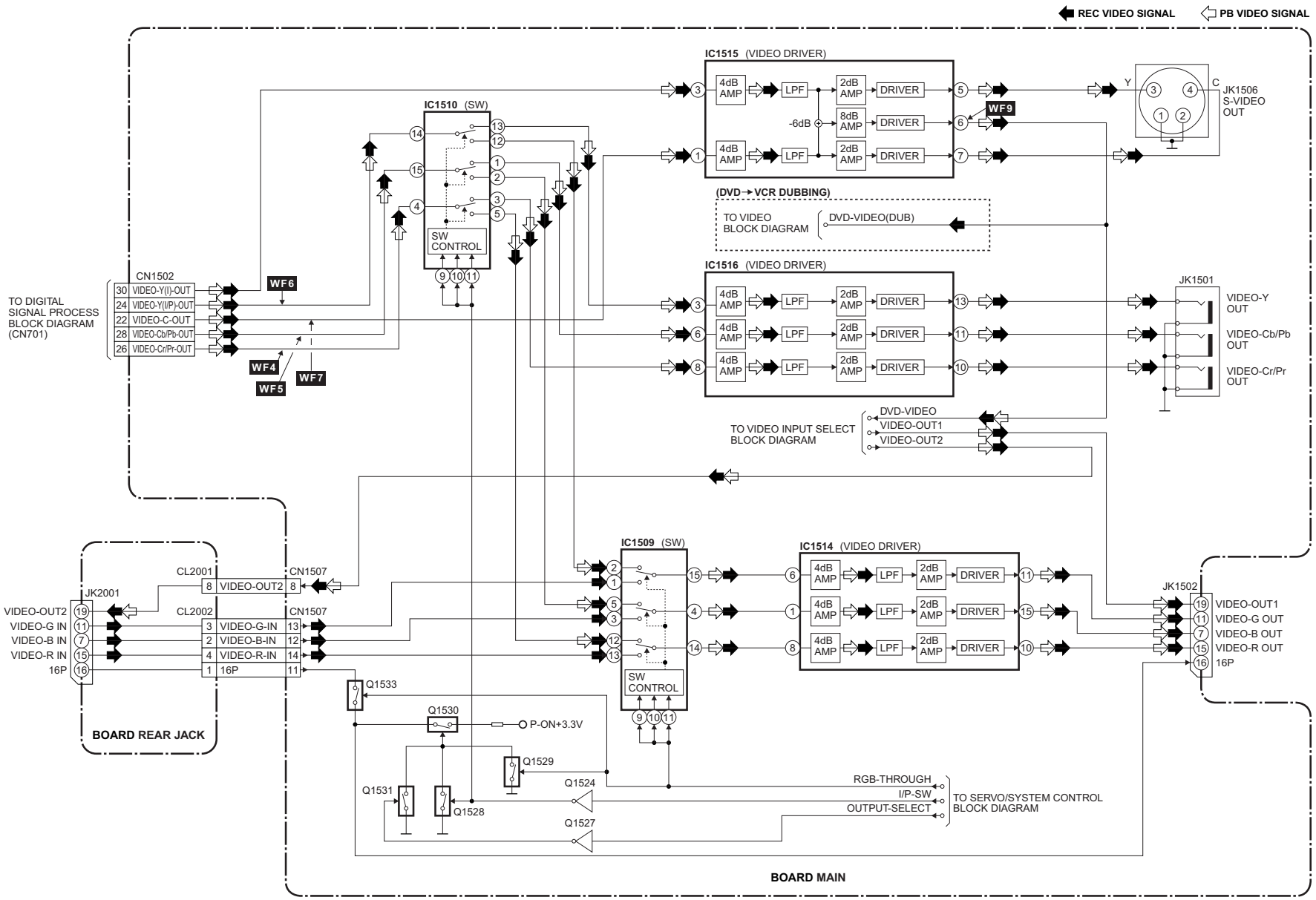
Video Input Select Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



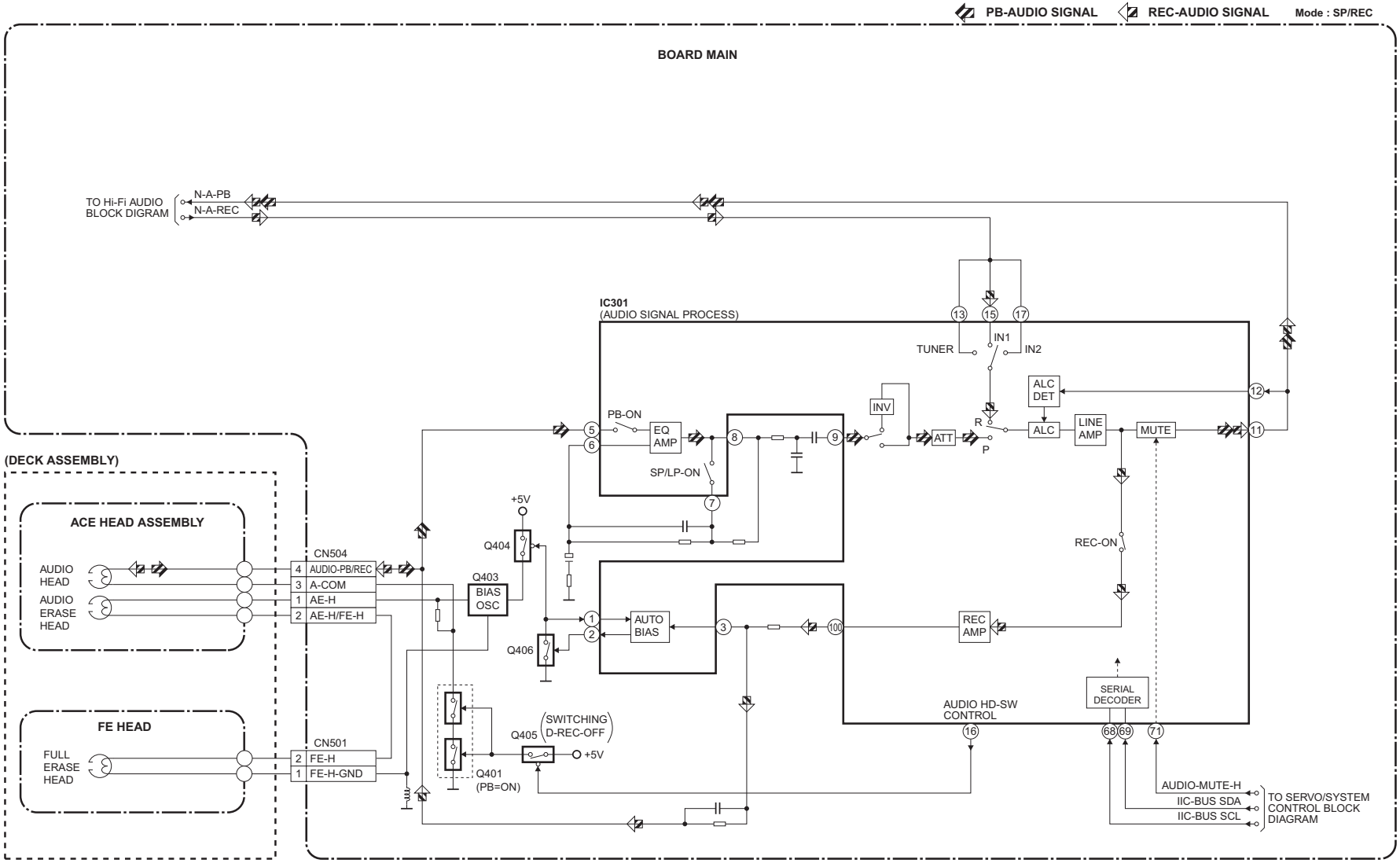
Video Output Select Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



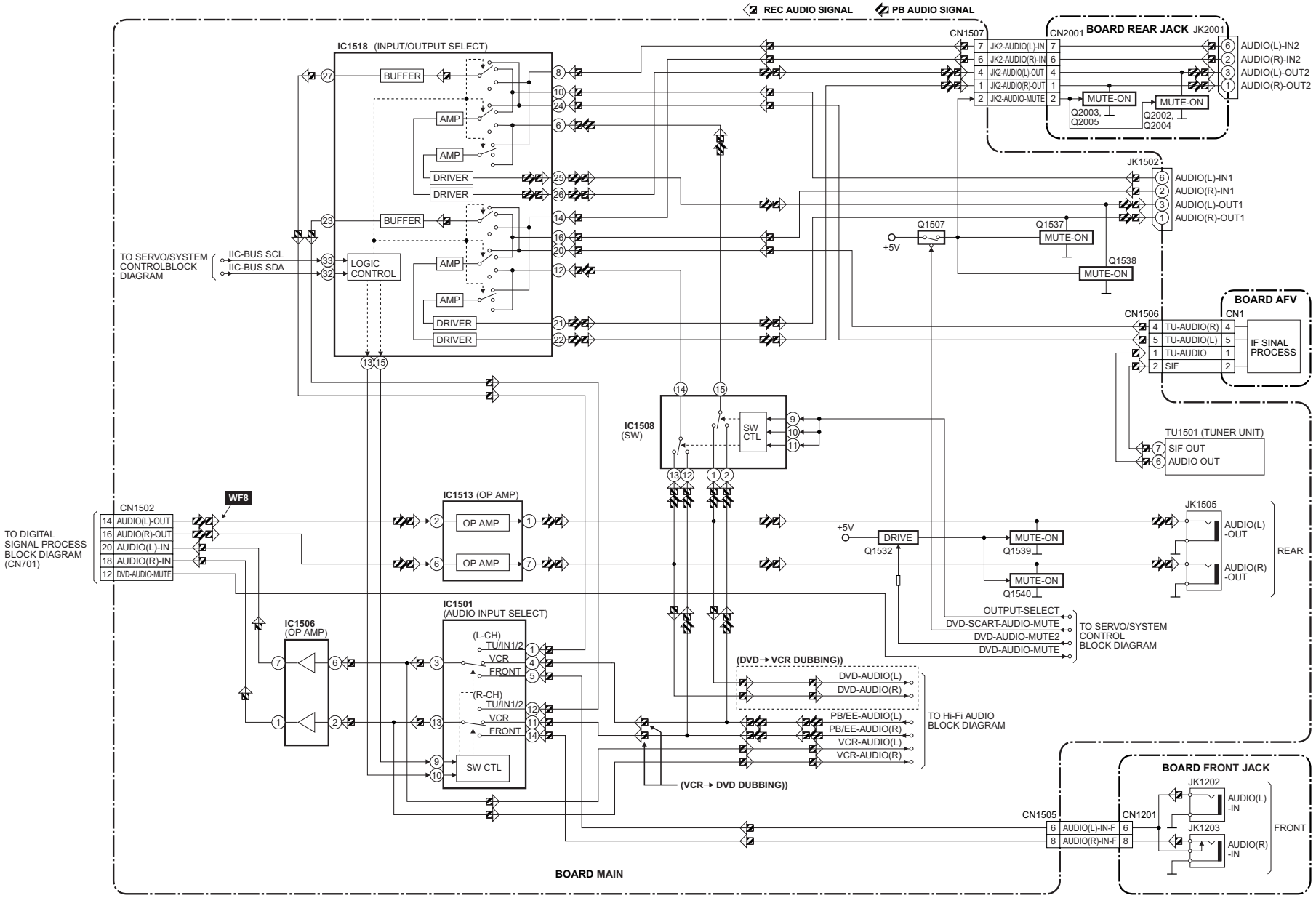
Audio Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



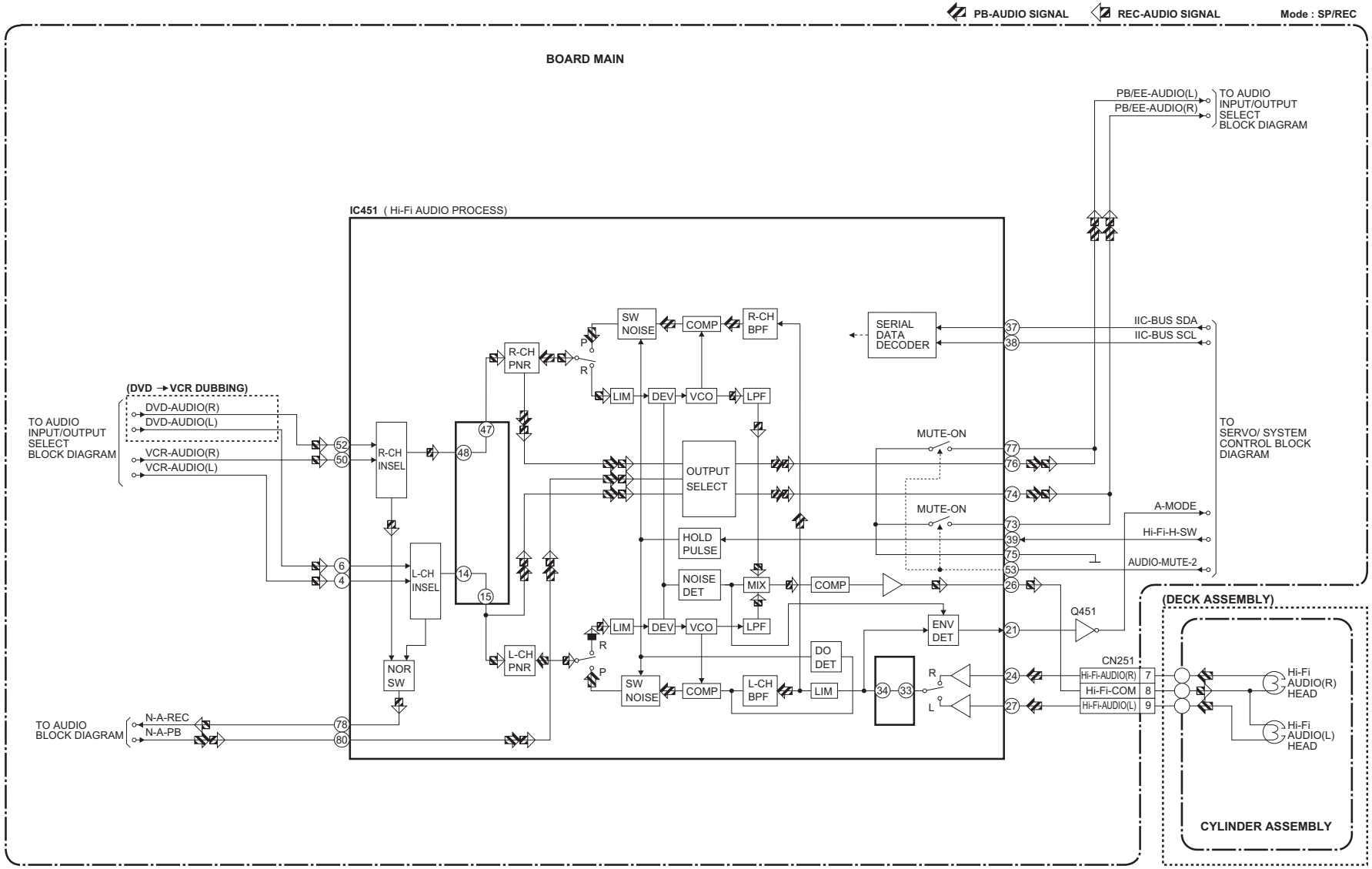
Audio Input/Output Select Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



Hi-Fi Audio Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



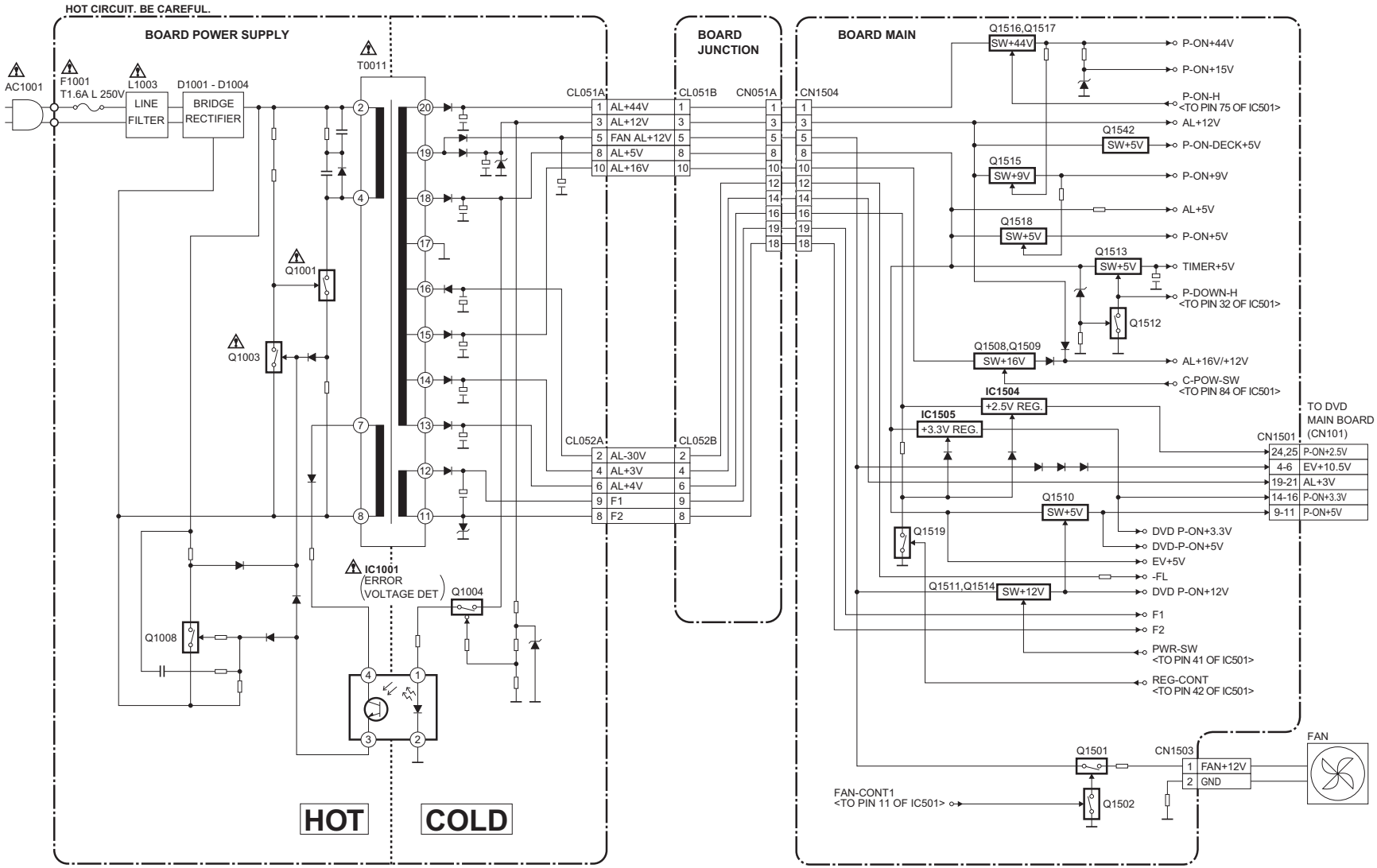
Power Supply Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



SCHEMATIC DIAGRAMS / BOARD'S AND TEST POINTS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Standard Notes

WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.
6. Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

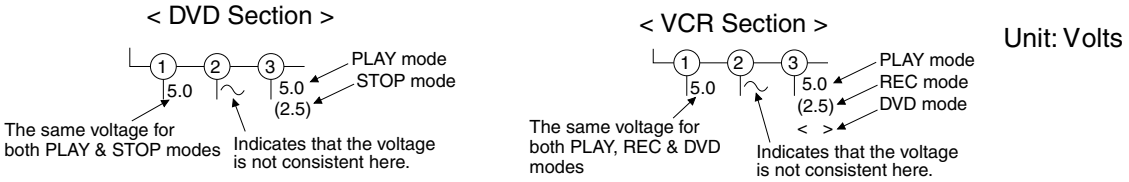
2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

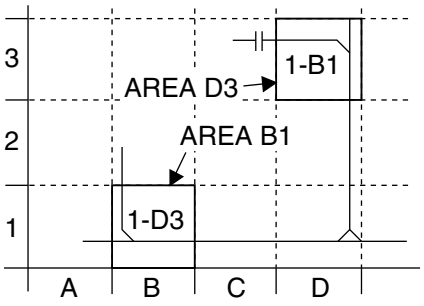
4. Voltage indications for PLAY and REC modes on the schematics are as shown below:



5. How to read converged lines

1-D3
- Distinction Area
- Line Number (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

: Indicates a test point with a jumper wire across a hole in the BOARD.

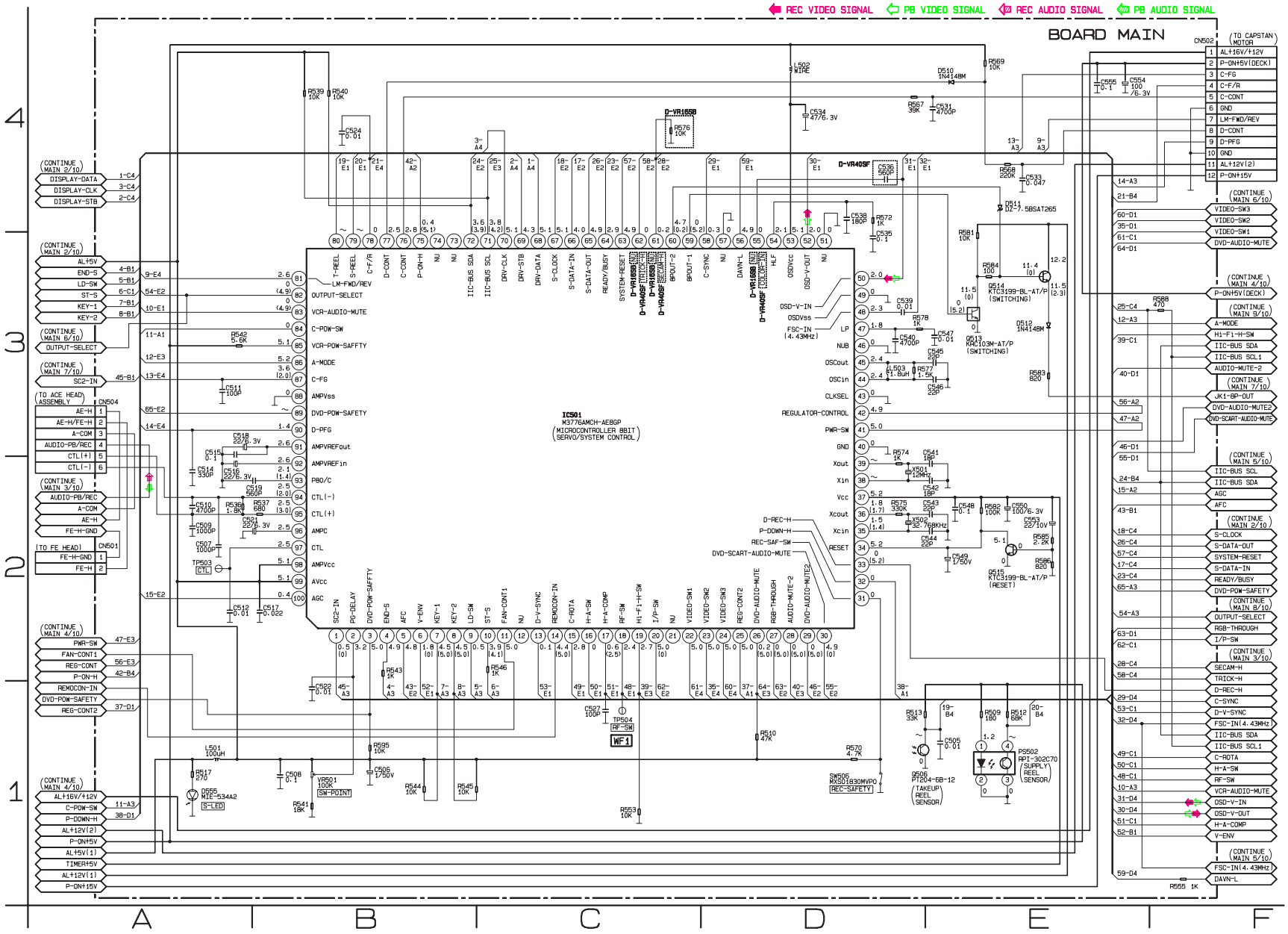
: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 1/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

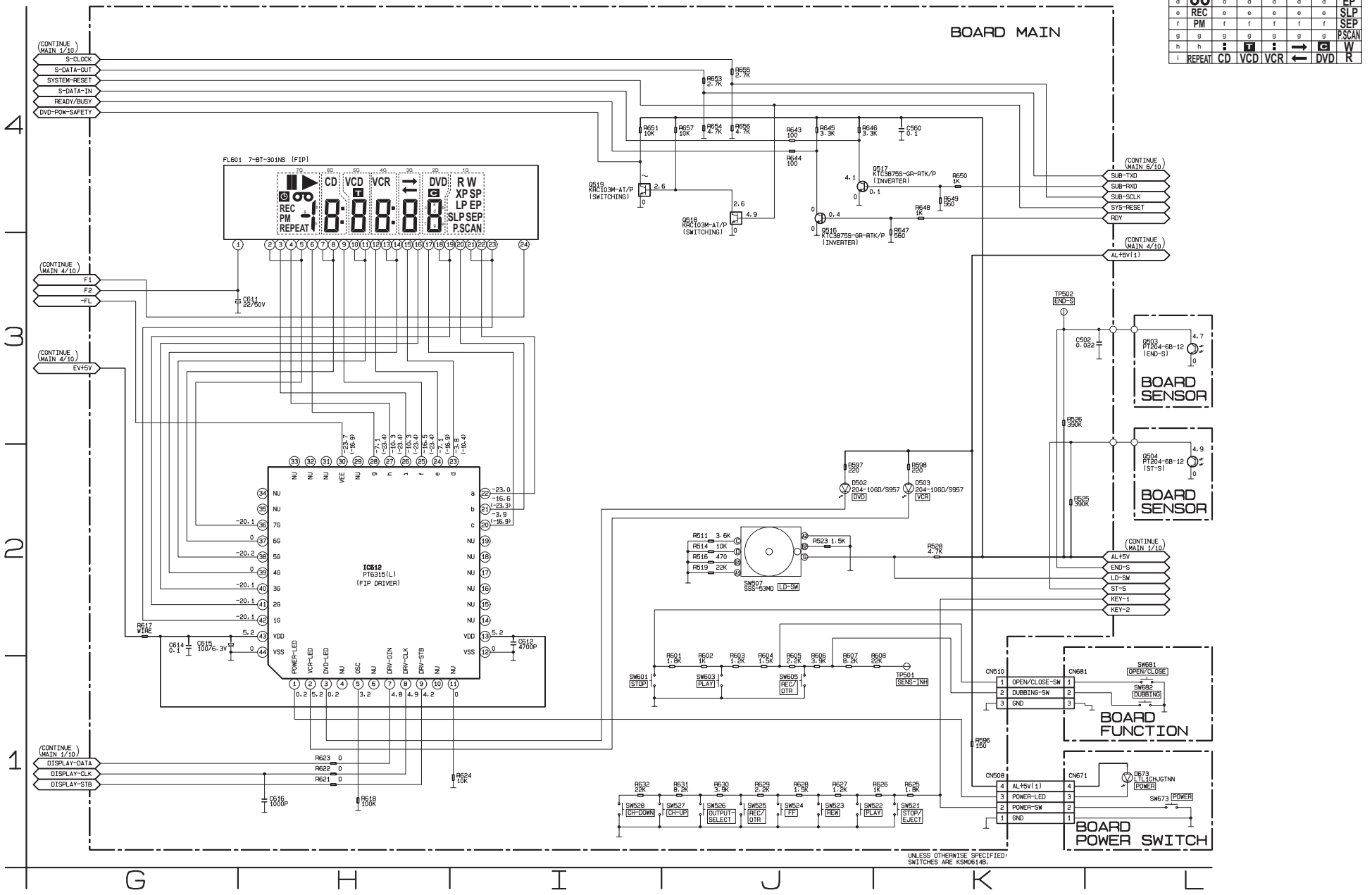


Main 2/10, Power Switch, Function & Sensor Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

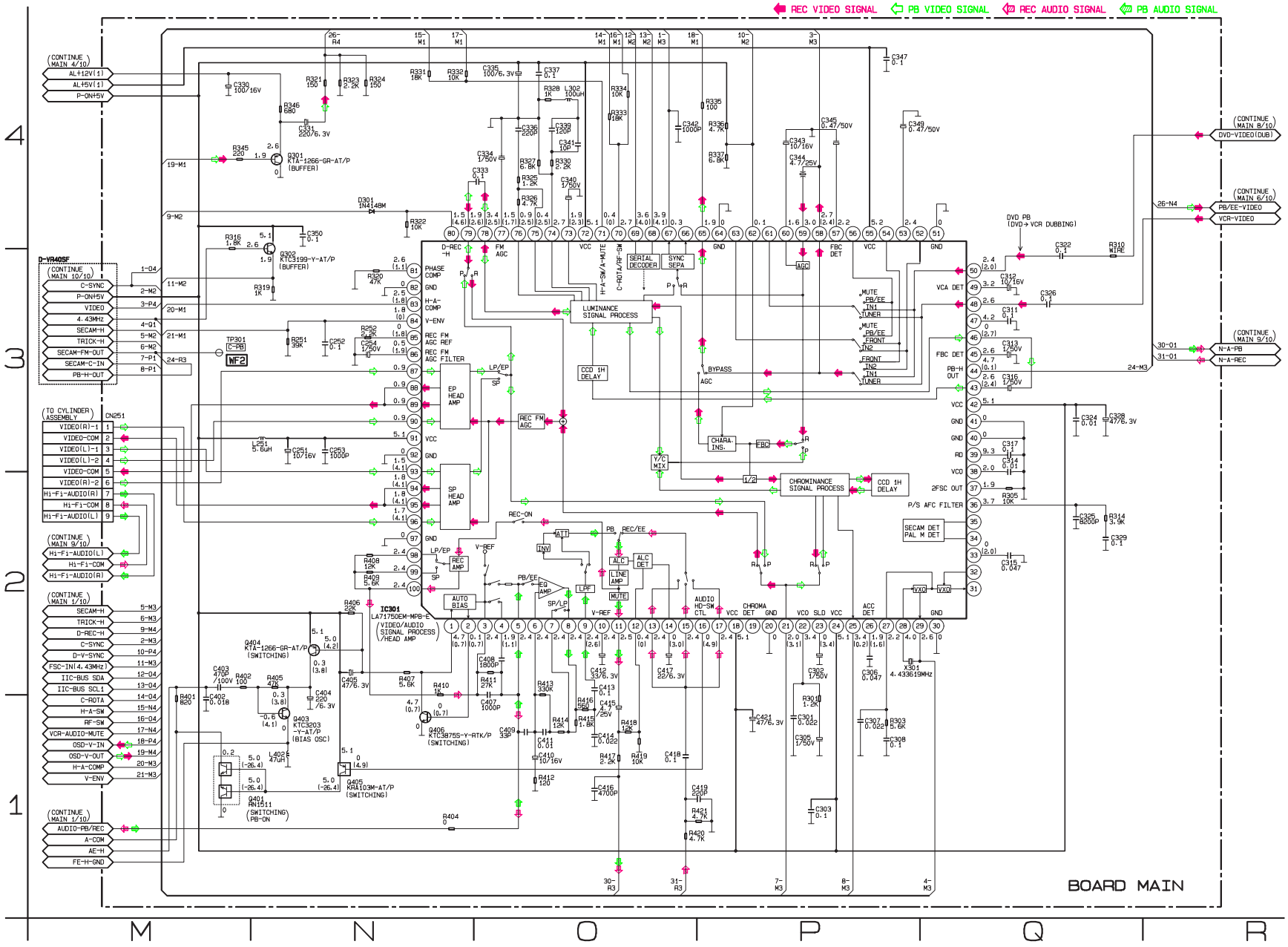
FL601 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	▶	a	a	a	a	a	XP
b	■	b	b	b	b	b	SP
c	⏻	c	c	c	c	c	LP
d	⏻	d	d	d	d	d	EP
e	REC	e	e	e	e	e	SLP
f	PM	f	f	f	f	f	SEP
g	g	g	g	g	g	g	P.SCAN
h	h	⏸	T	⏸	⟶	C	W
i	REPEAT	CD	VCD	VCR	⟵	DVD	R



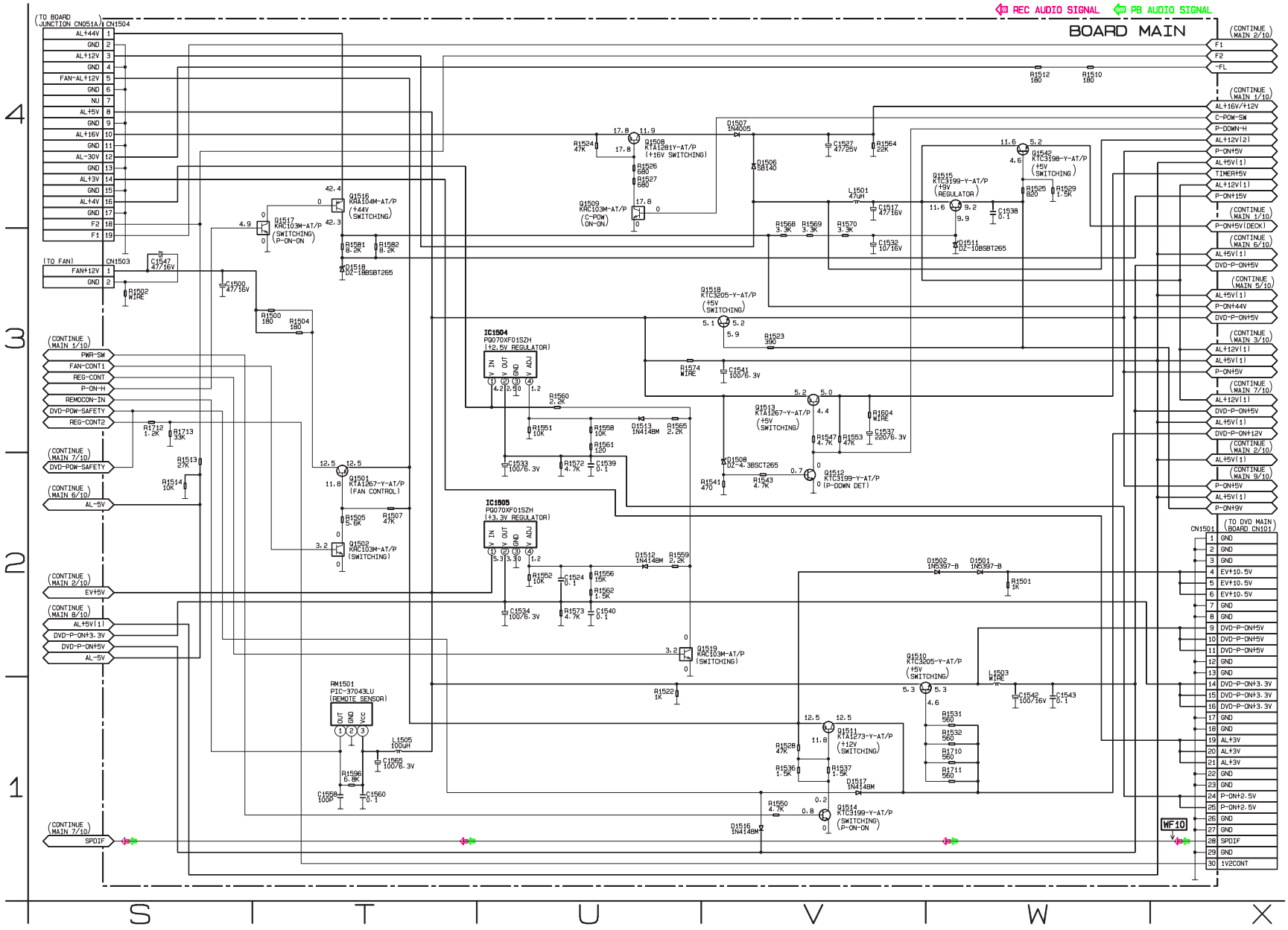
Main 3/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



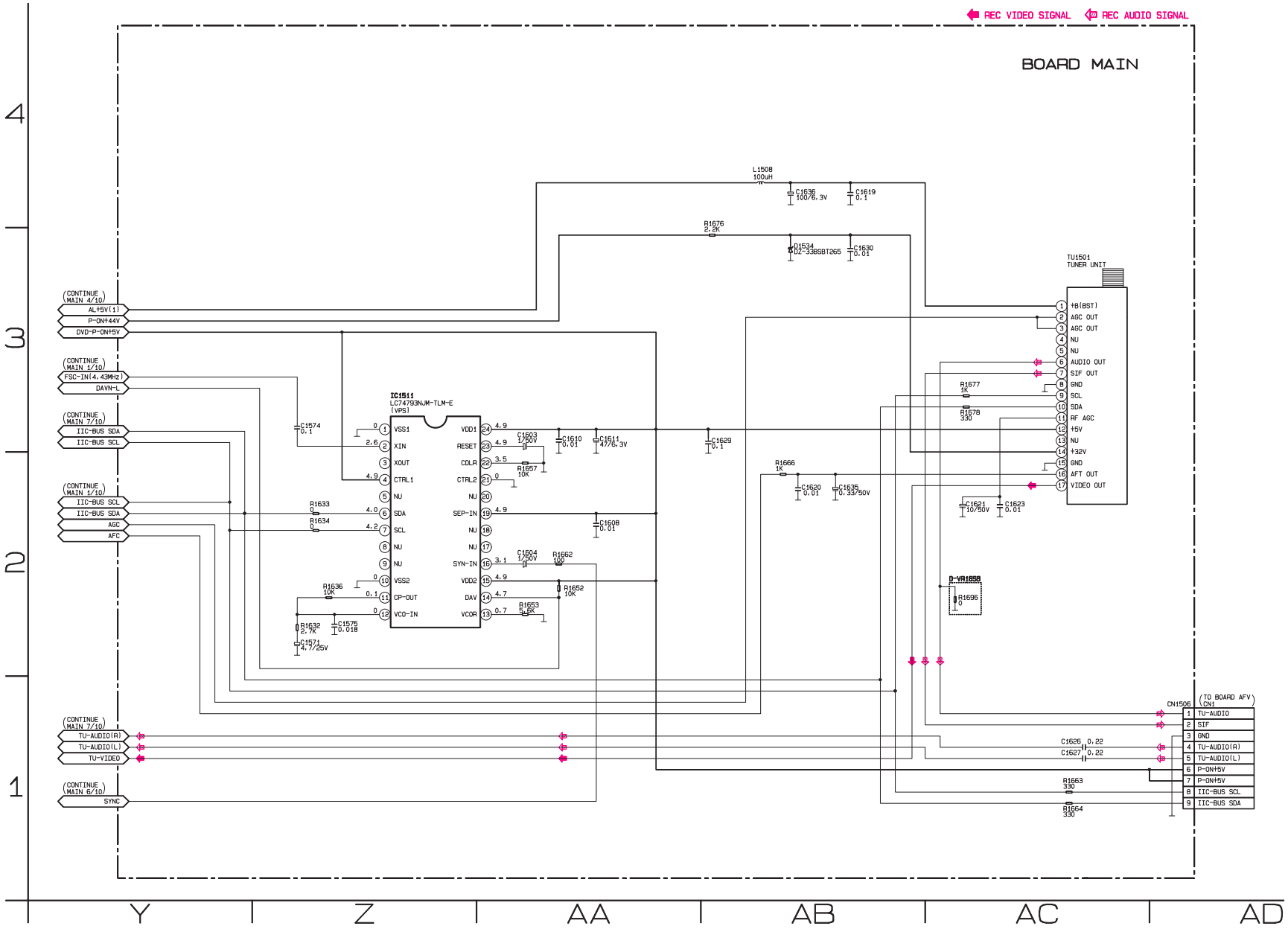
Main 4/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



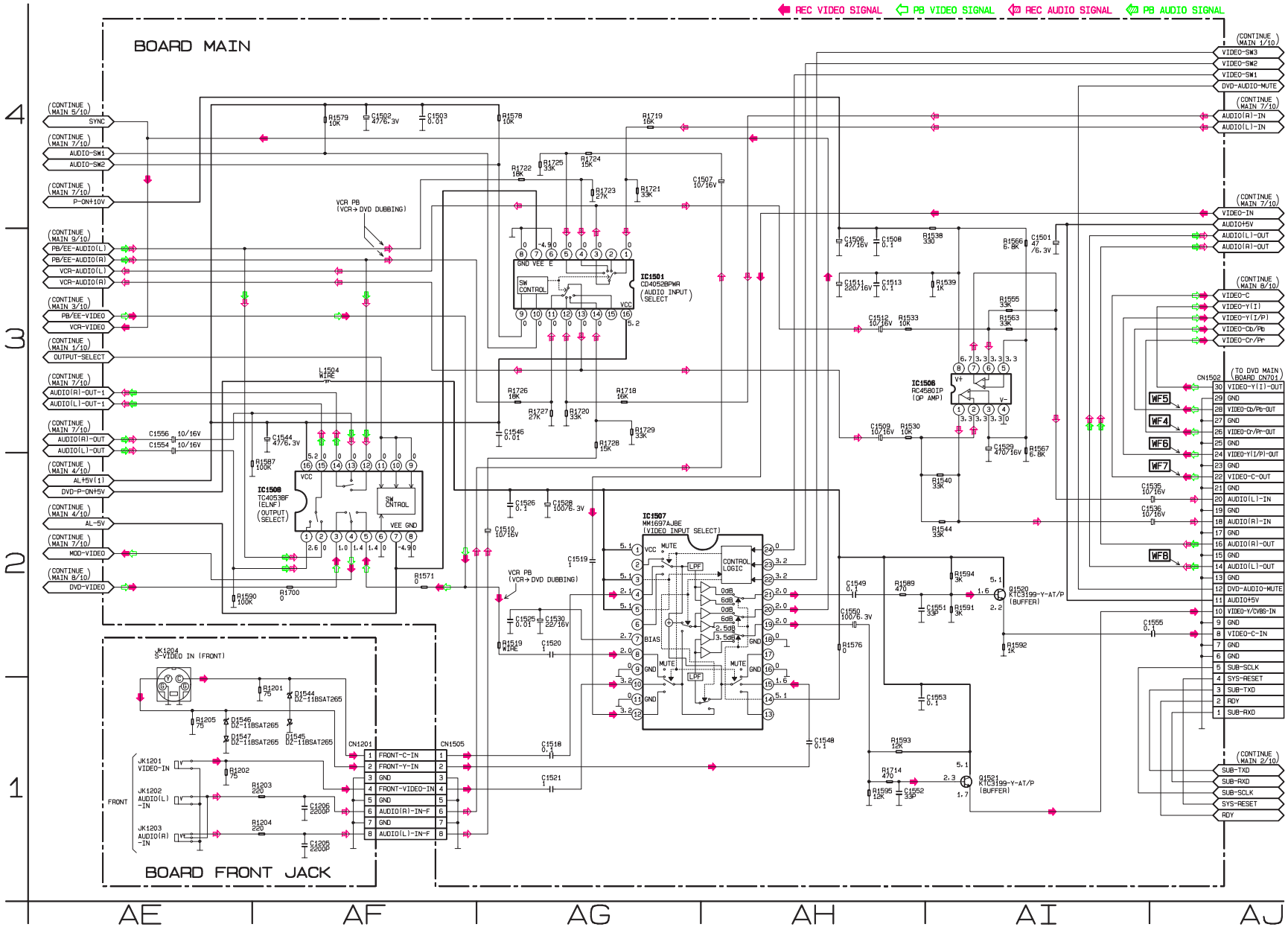
Main 5/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



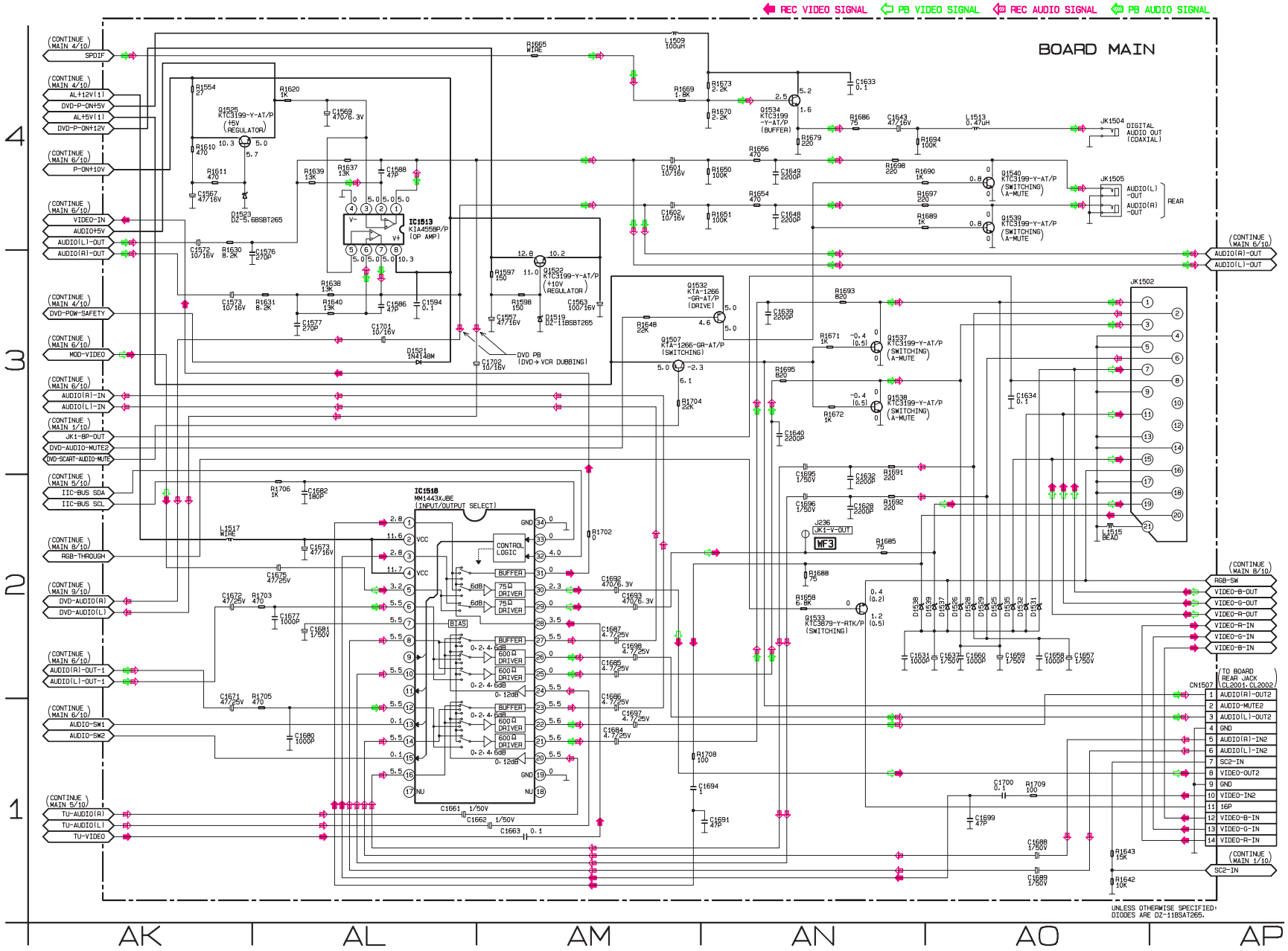
Main 6/10 & Front Jack Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



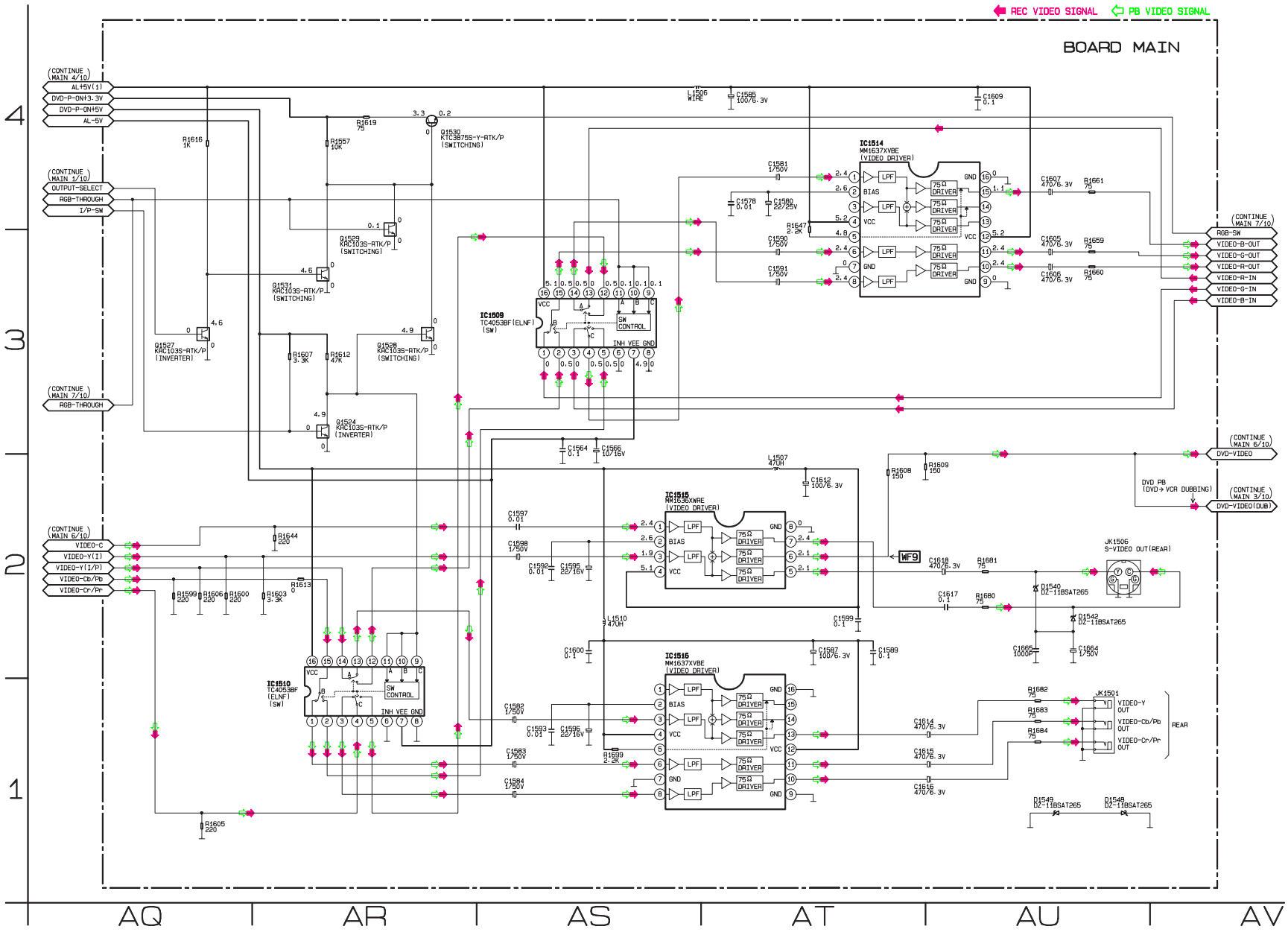
Main 7/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



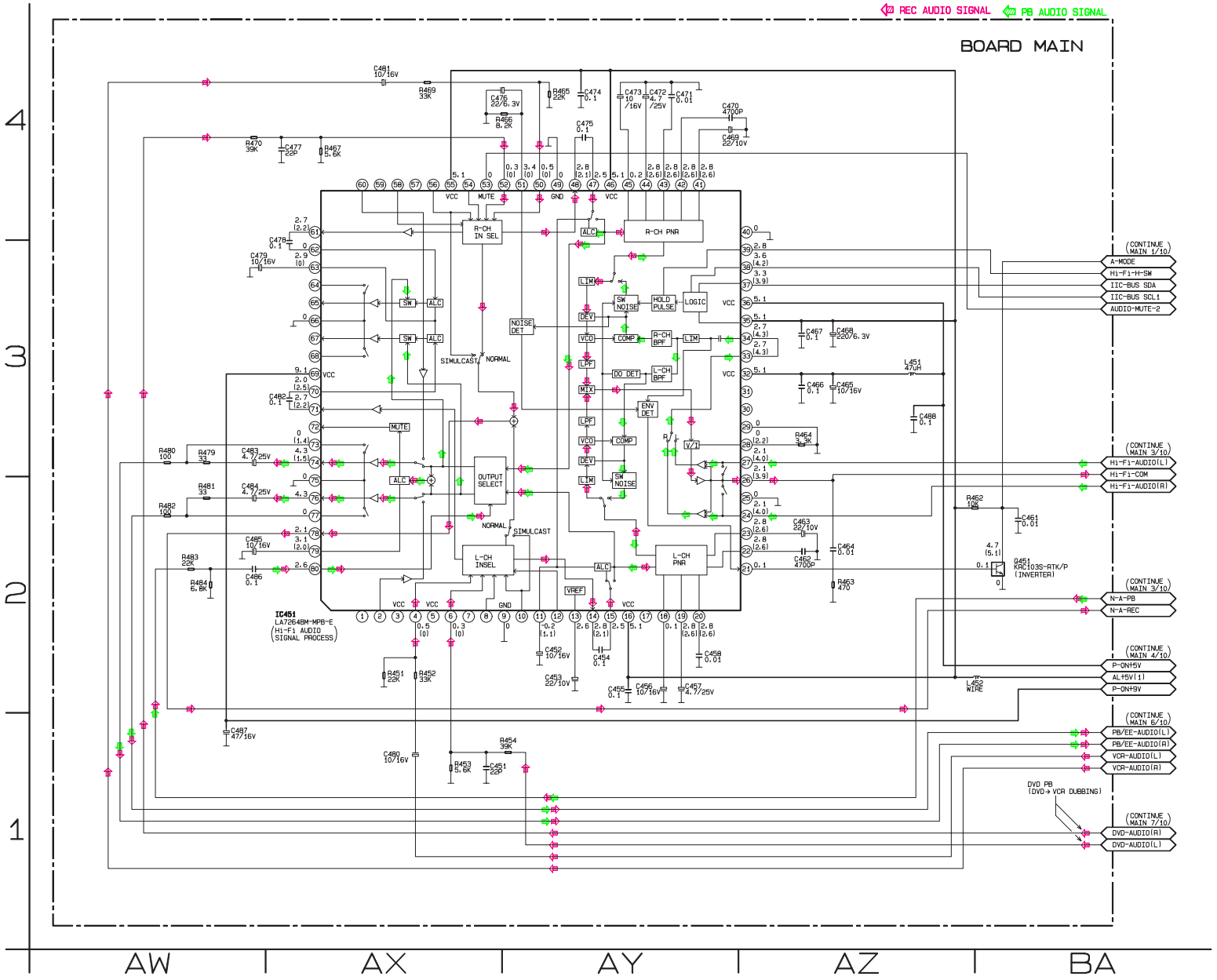
Main 8/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



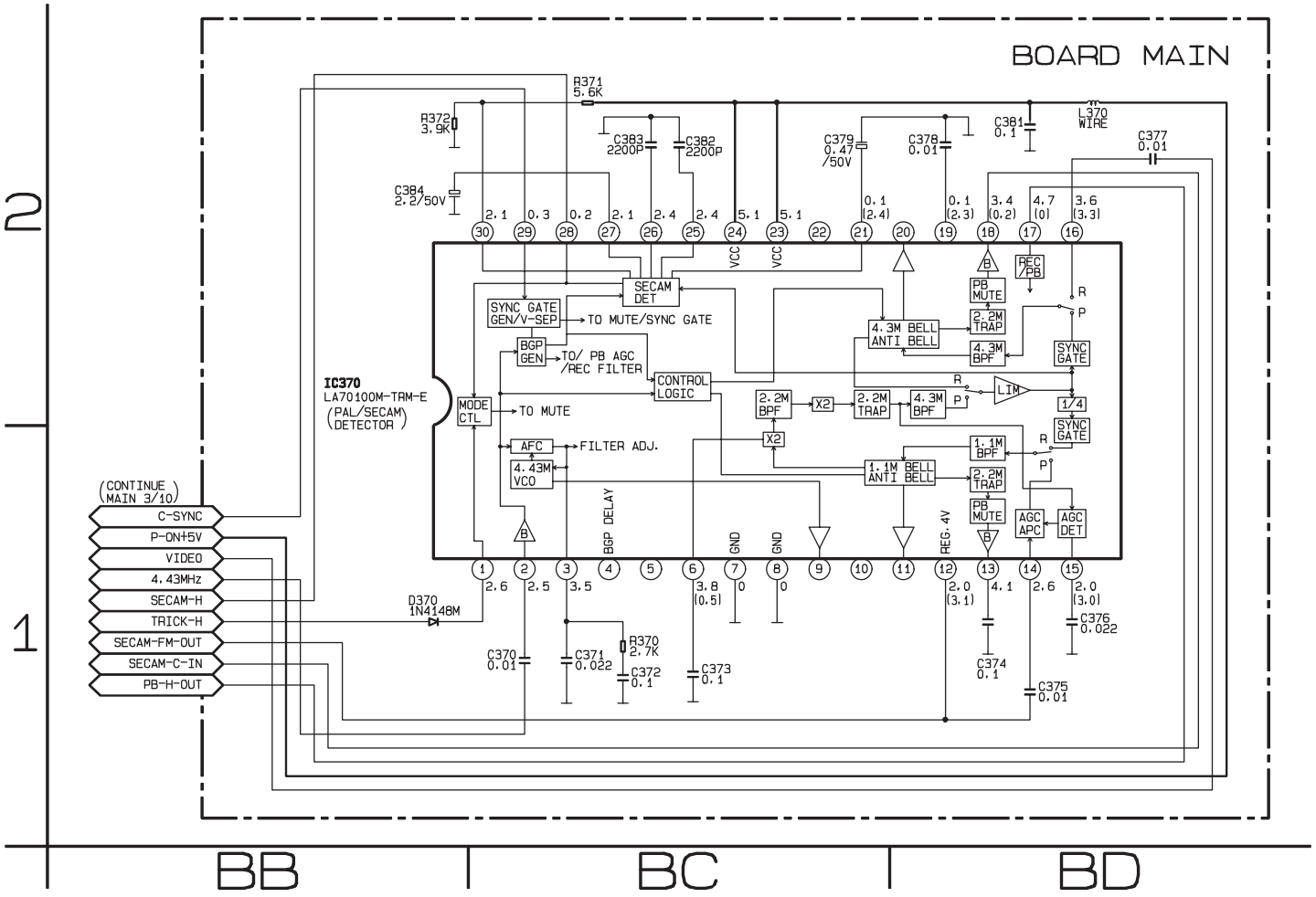
Main 9/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



Main 10/10 Schematic Diagram < VCR Section > (D-VR40SF only)

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



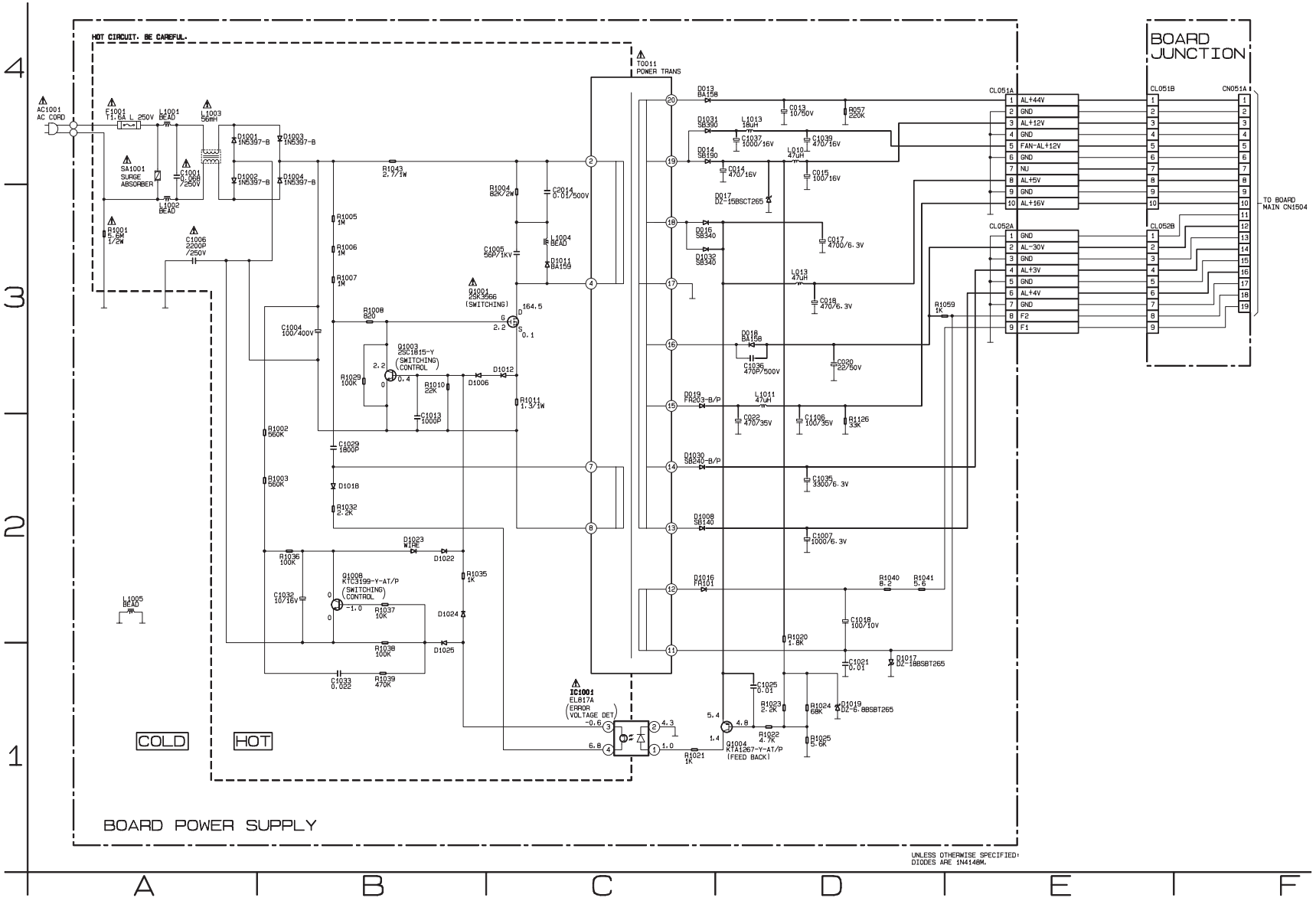
Power Supply & Junction Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

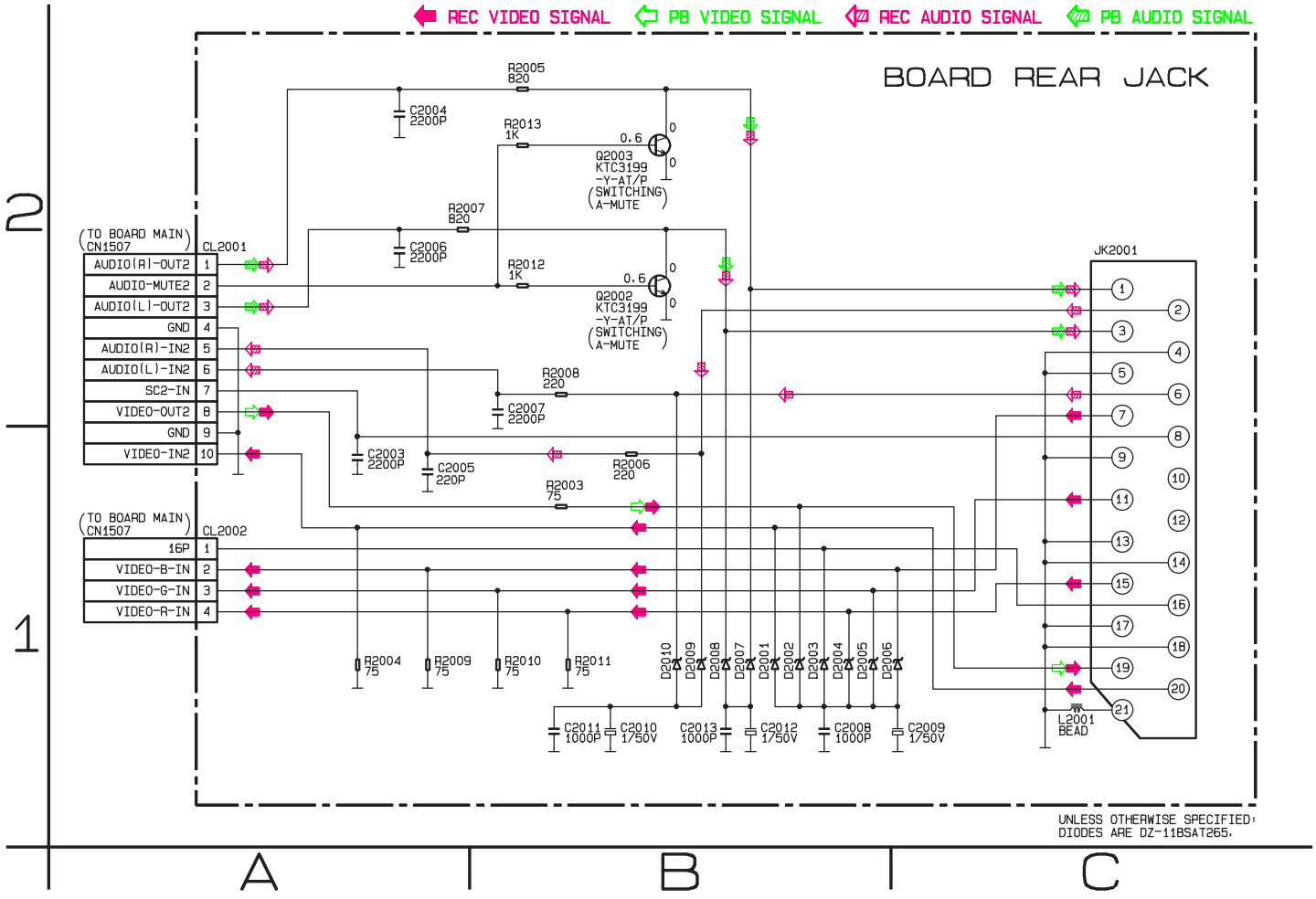
CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



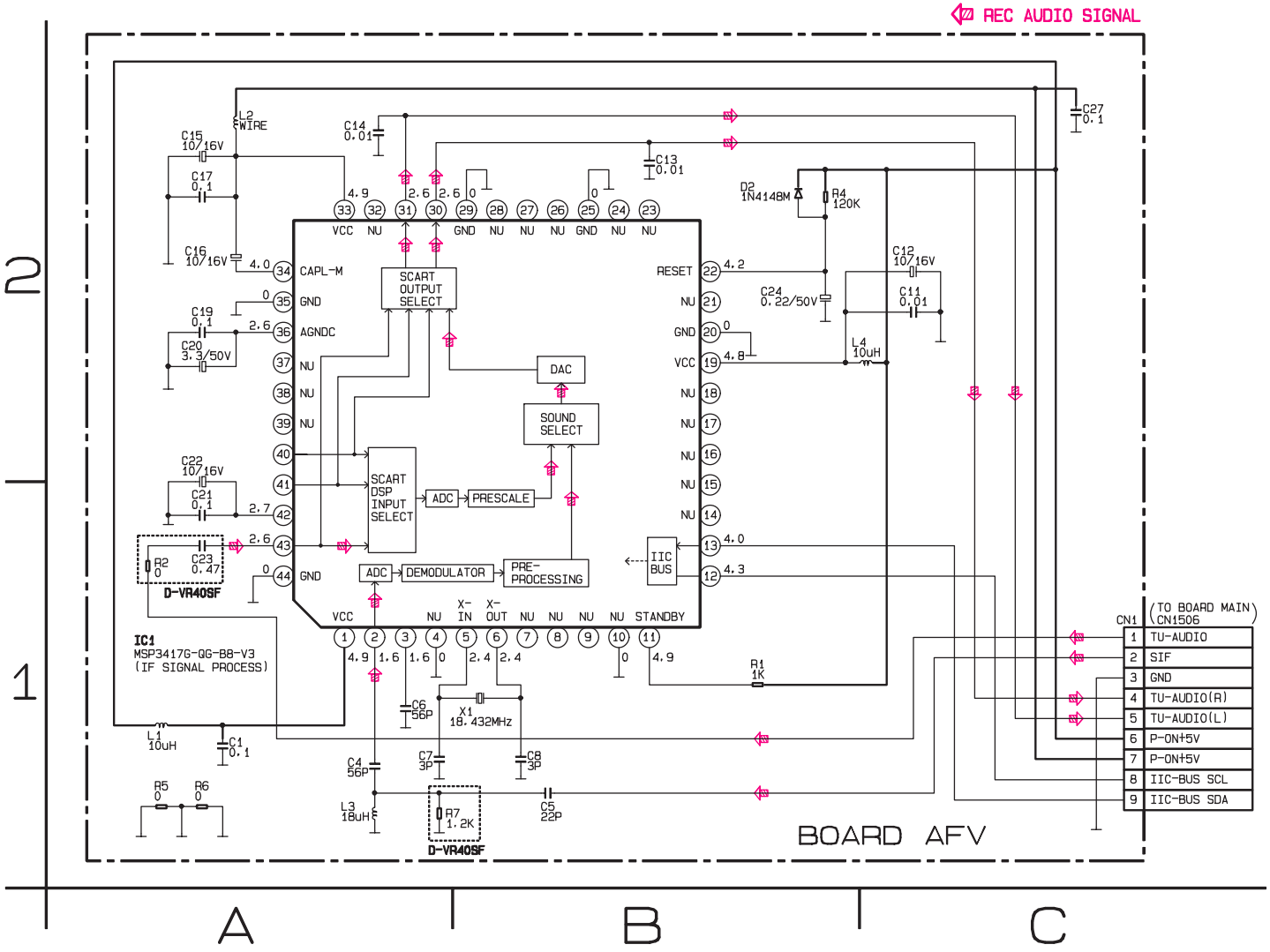
Rear Jack Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



AFV Schematic Diagram < VCR Section >

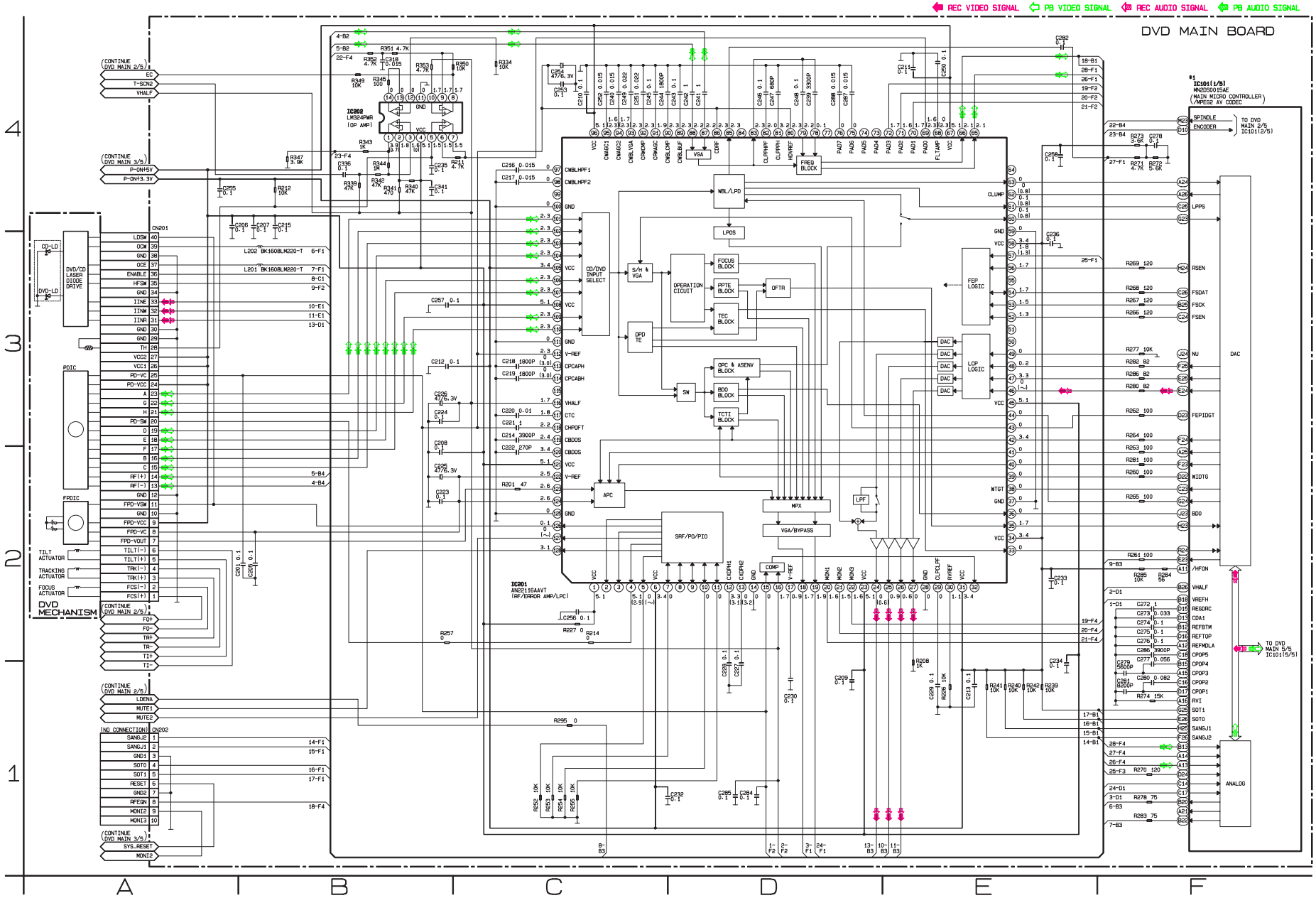
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



DVD Main 1/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

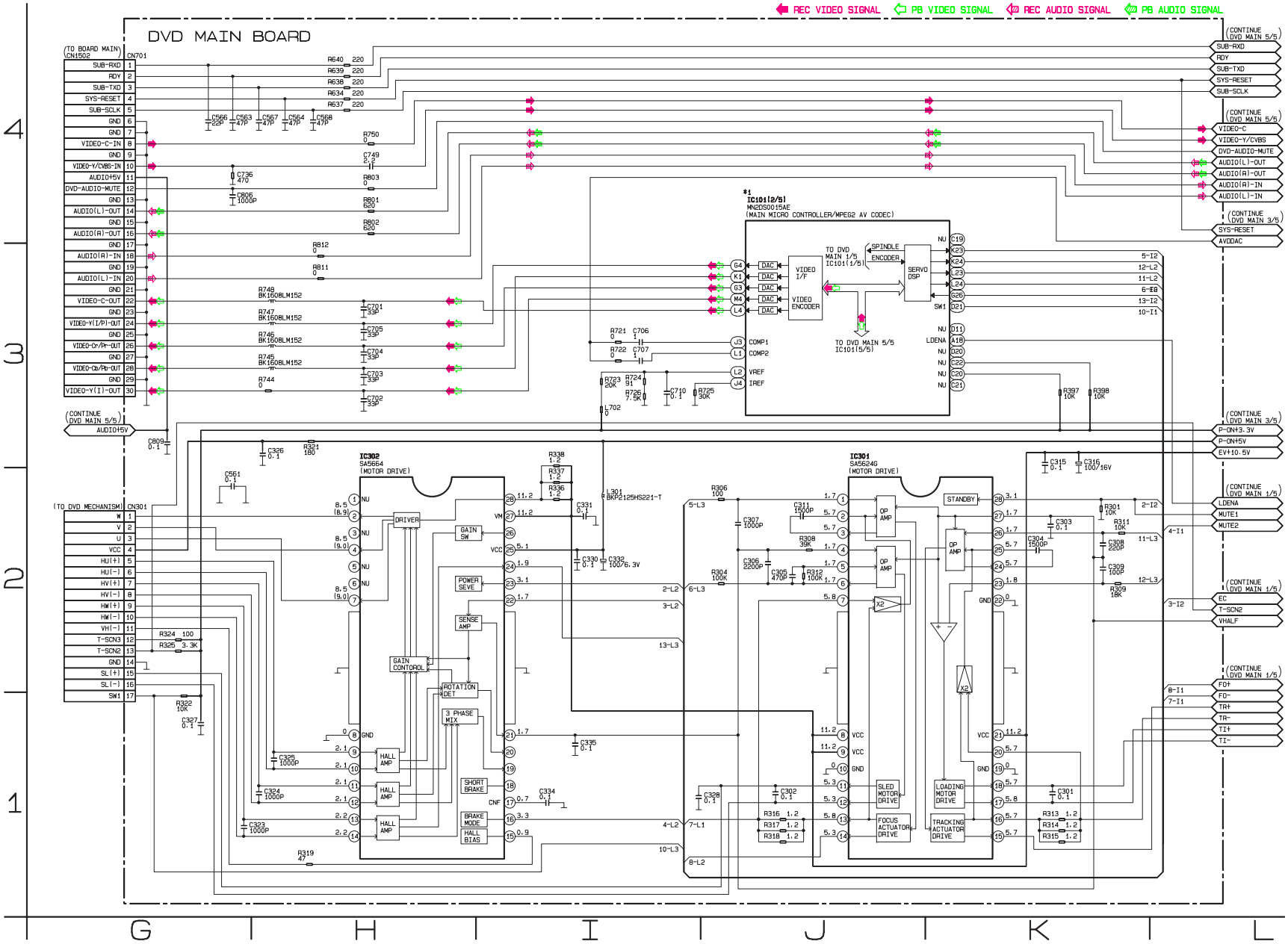
∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD Main 2/5 Schematic Diagram < DVD Section >

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.

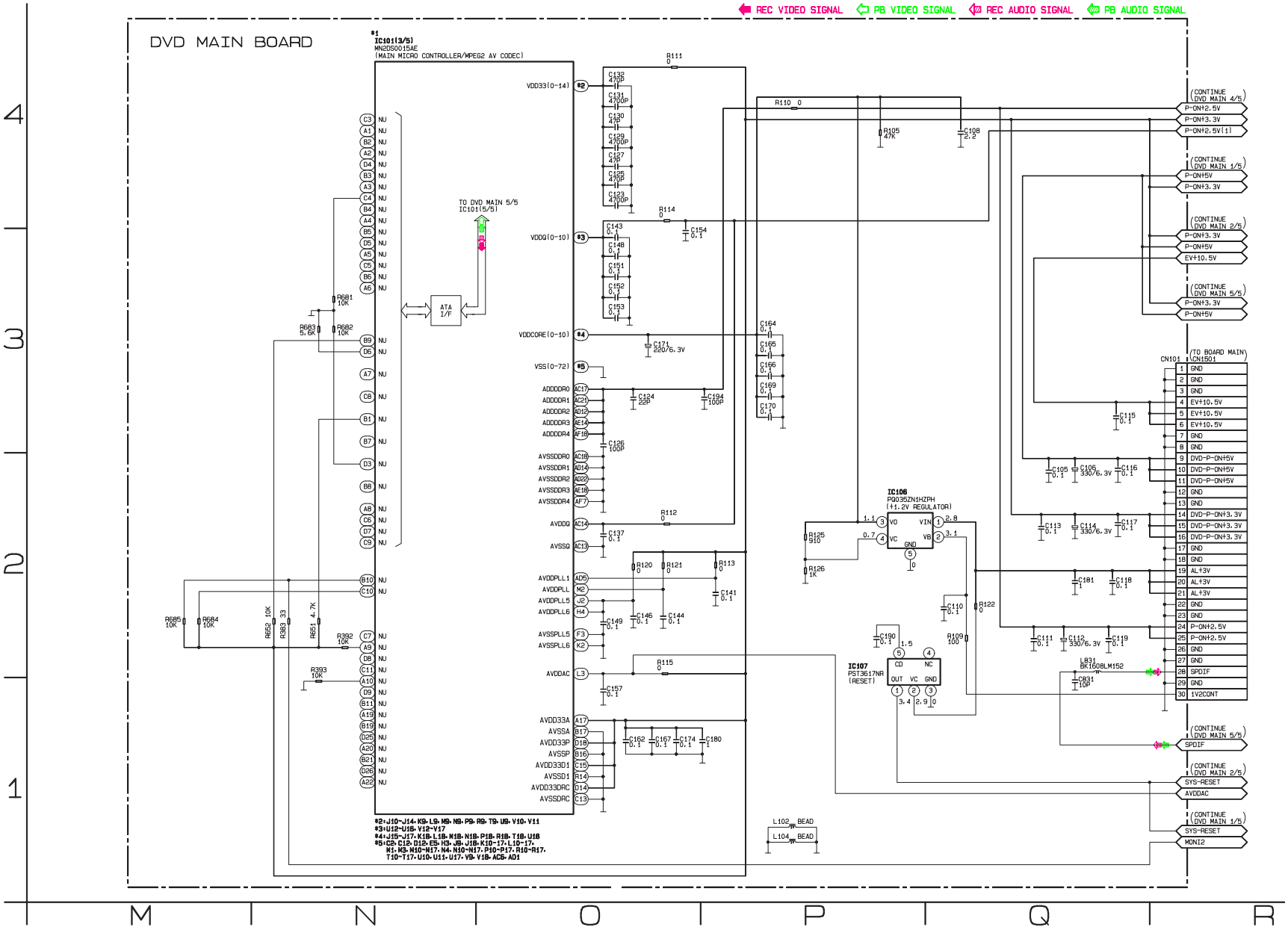
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



DVD Main 3/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

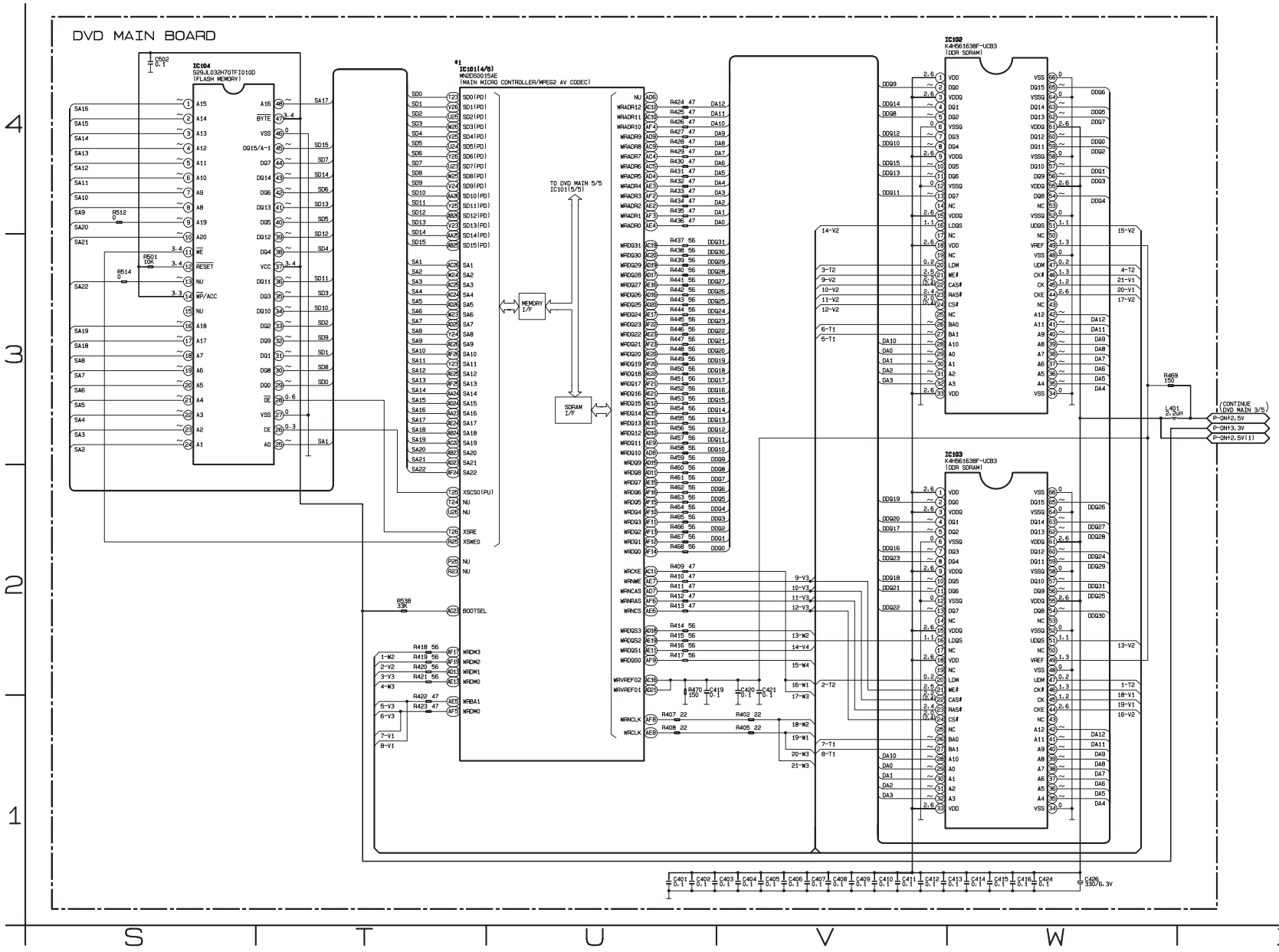
∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD Main 4/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

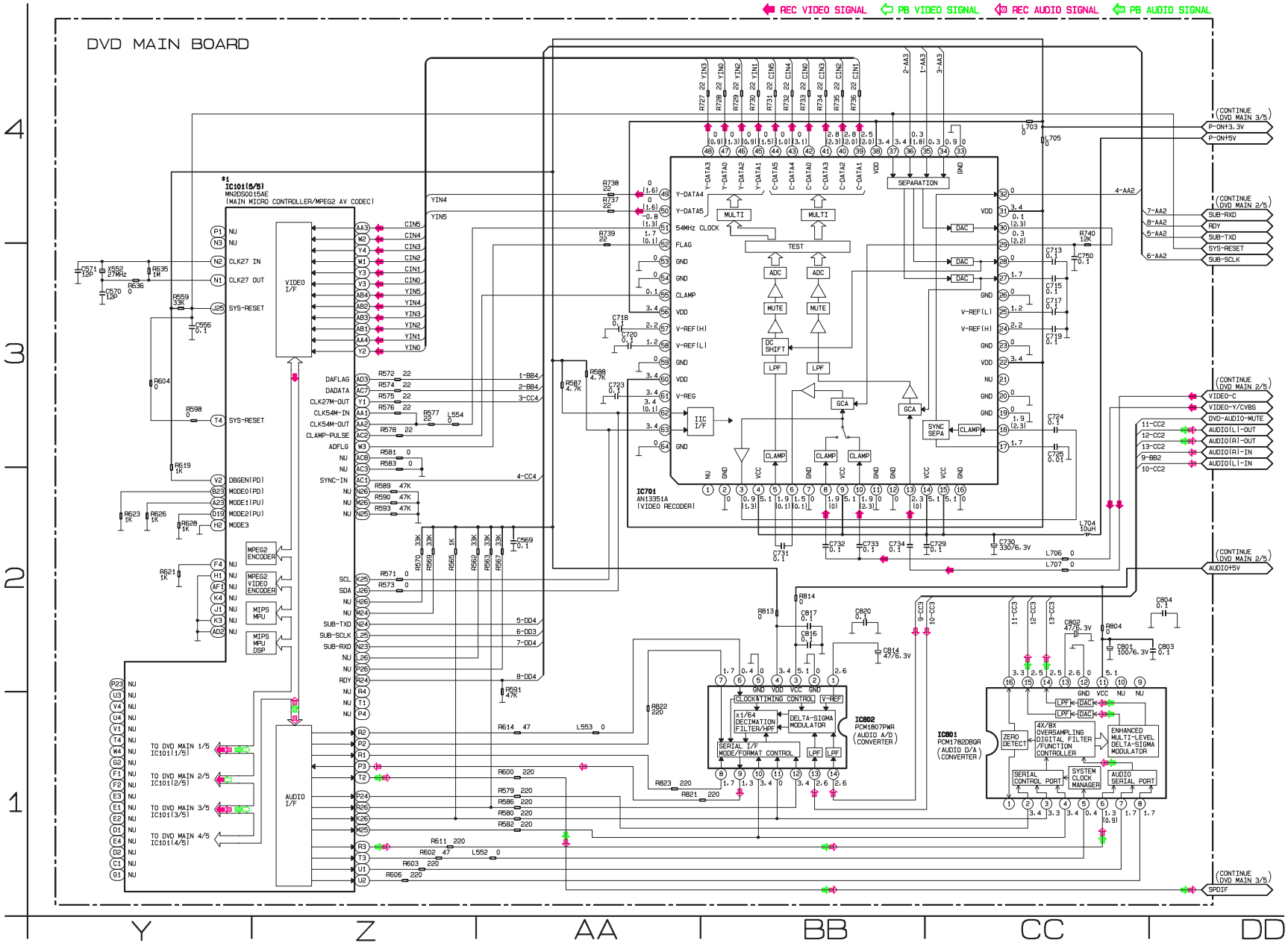
∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD Main 5/5 Schematic Diagram < DVD Section >

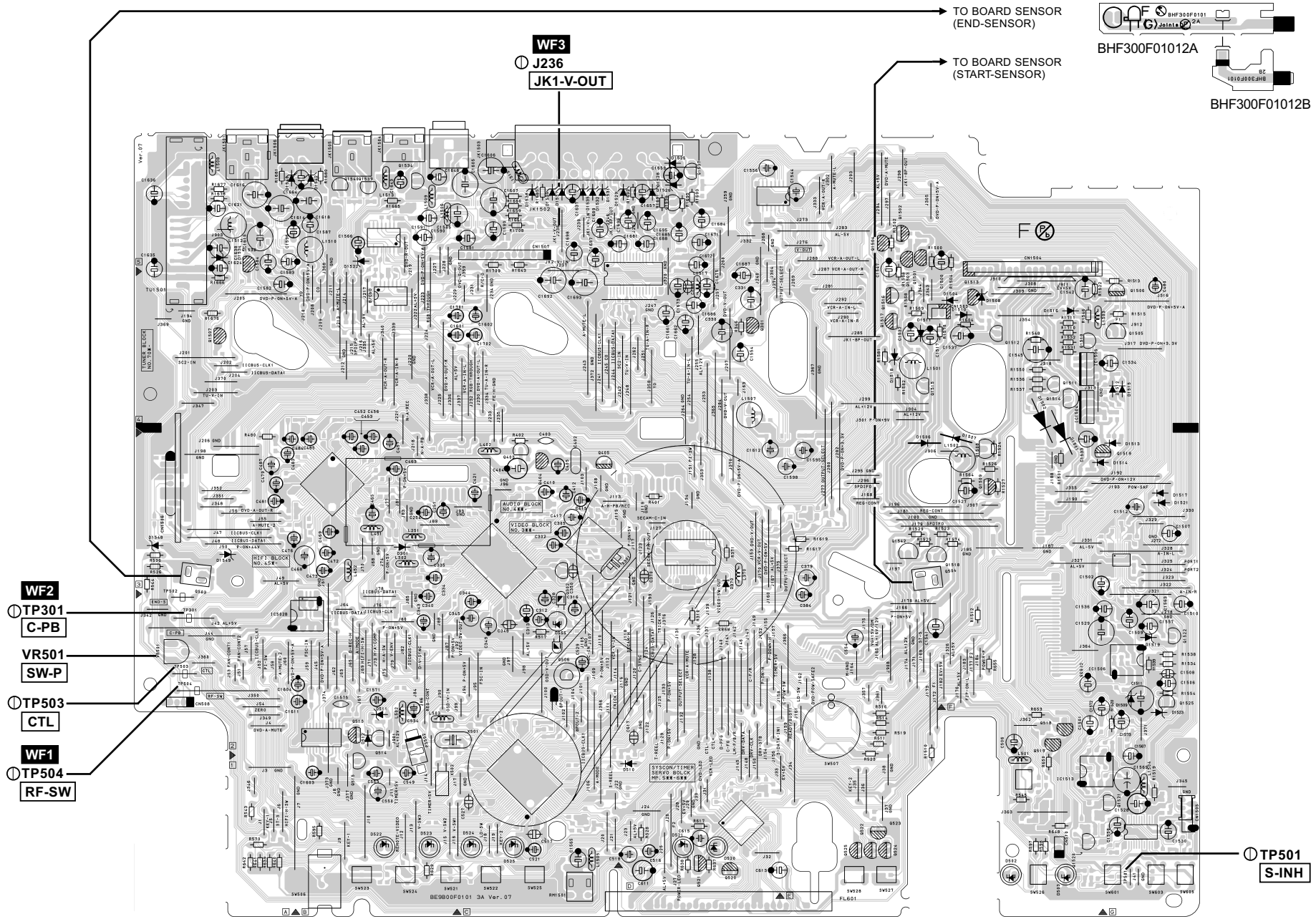
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

∗1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



BOARD MAIN Top View

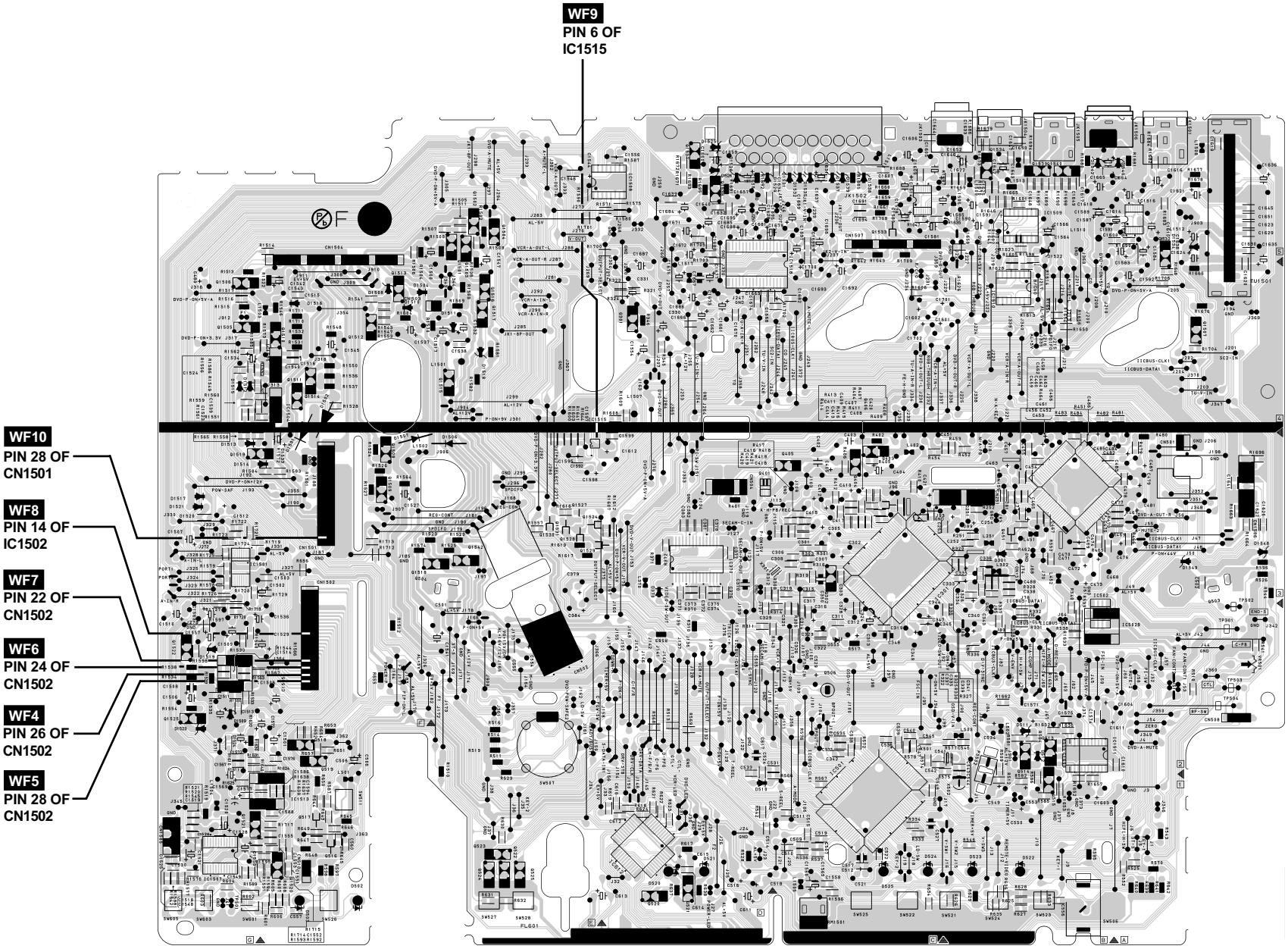
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



BOARD SENSOR Top View

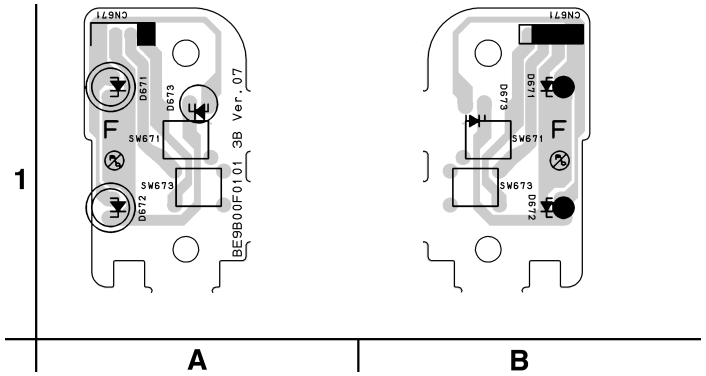
BOARD MAIN Bottom View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



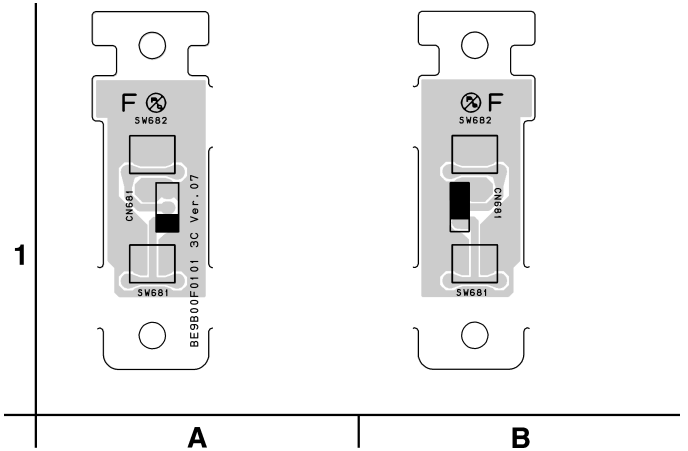
BOARD POWER SWITCH
Top View

BOARD POWER SWITCH
Bottom View



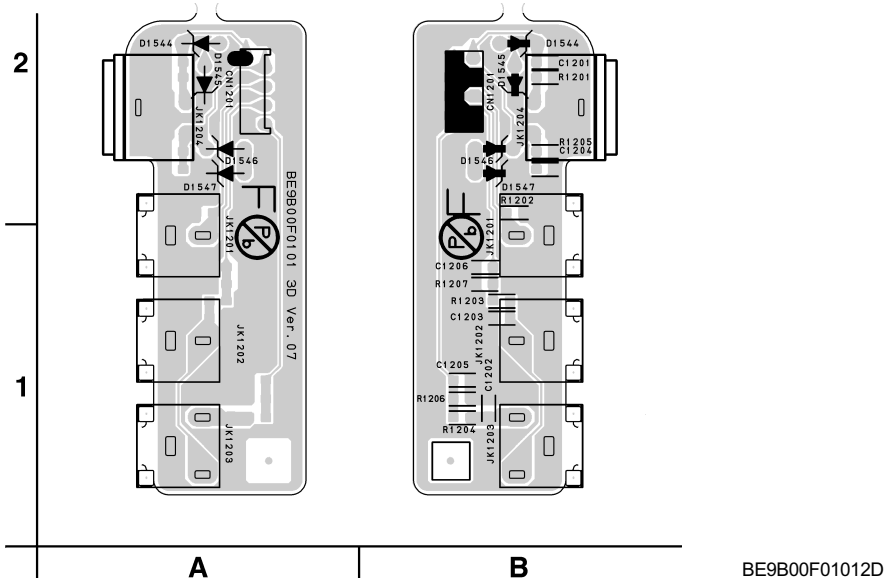
BOARD FUNCTION
Top View

BOARD FUNCTION
Bottom View



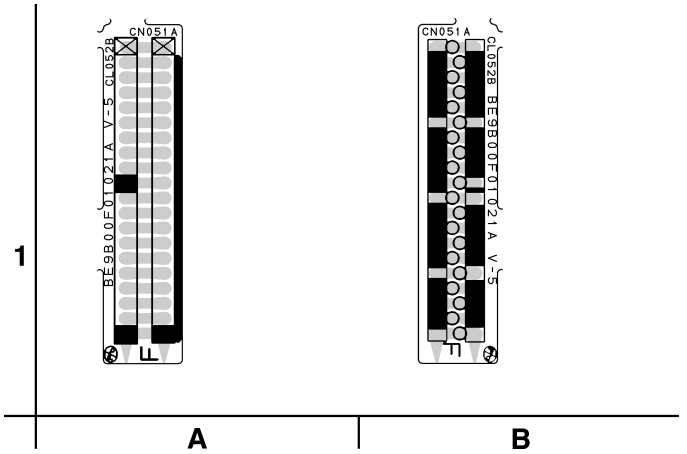
BOARD FRONT JACK
Top View

BOARD FRONT JACK
Bottom View



BOARD JUNCTION
Top View

BOARD JUNCTION
Bottom View



BOARD POWER SUPPLY Top View

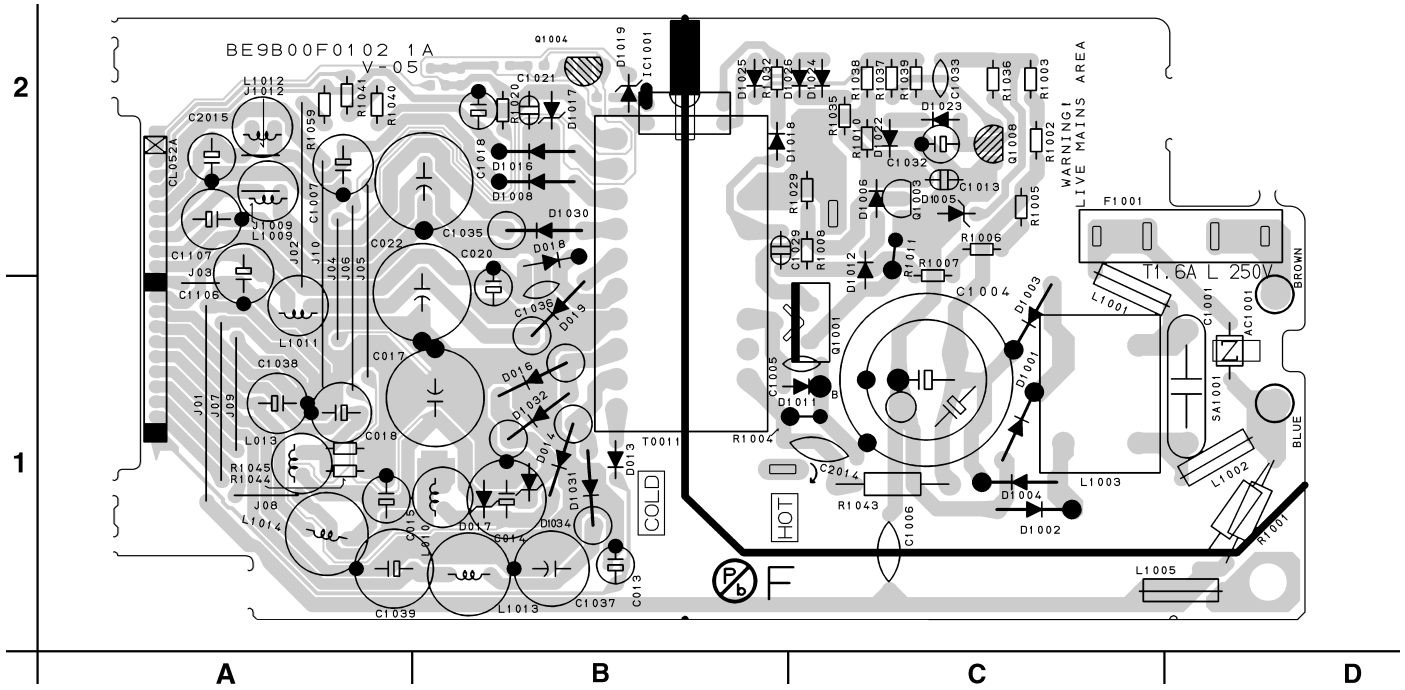
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



BOARD POWER SUPPLY Bottom View

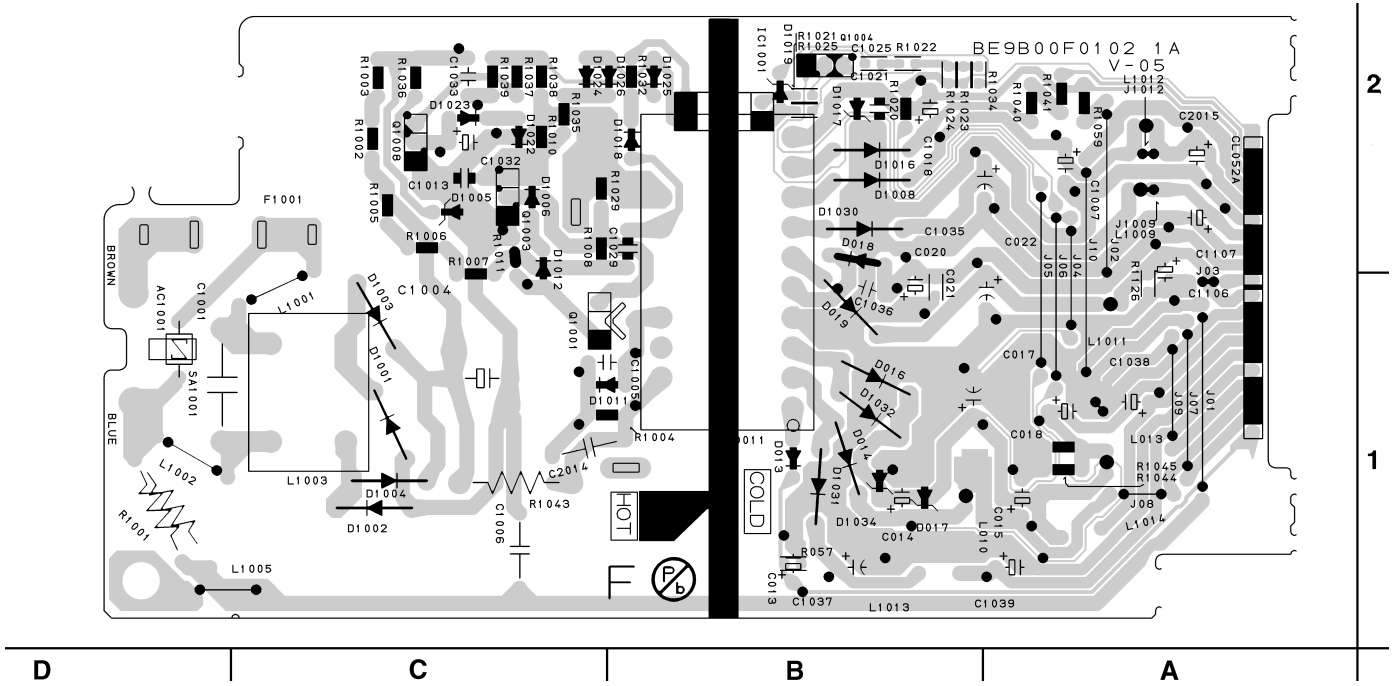
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

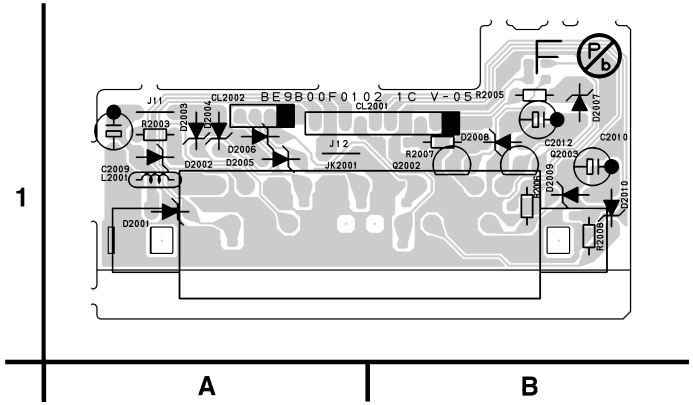
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

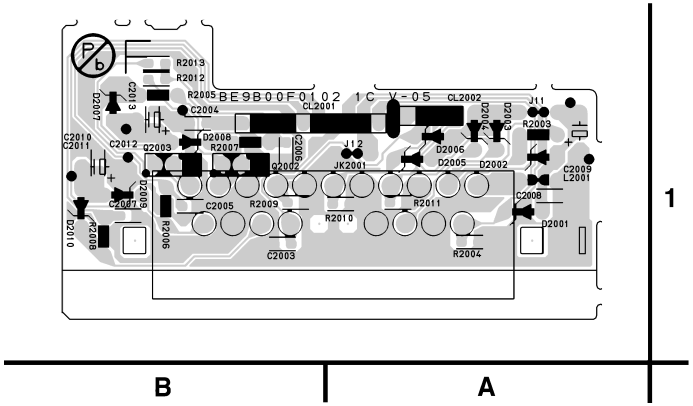
NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



BOARD REAR JACK Top View



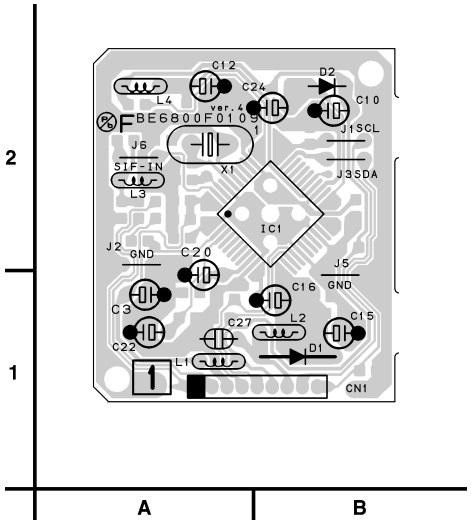
BOARD REAR JACK Bottom View



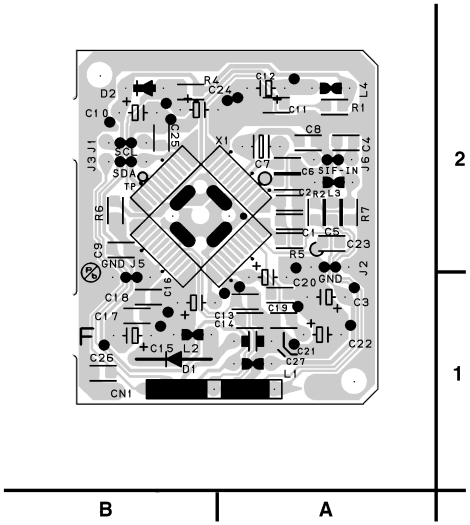
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

BE9B00F01021C

BOARD AFV Top View



BOARD AFV Bottom View

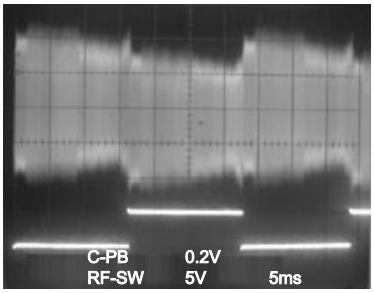


BE6800F01091

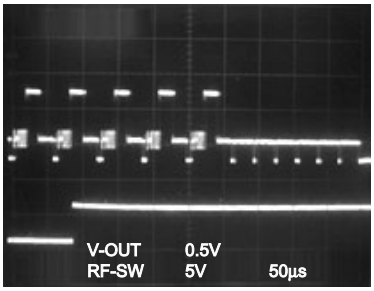
WAVEFORMS

NOTE:
Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)

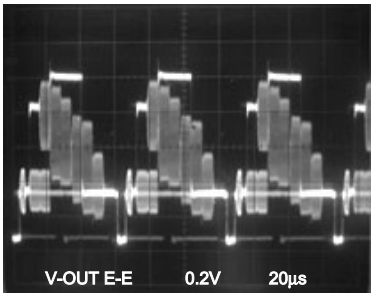
WF2 UPPER TP301
WF1 LOWER TP504



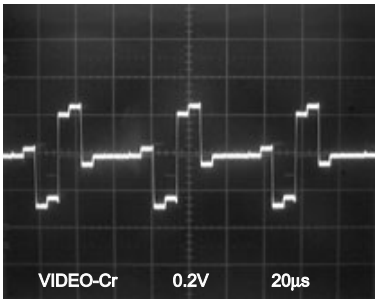
WF3 UPPER J236
WF1 LOWER TP504



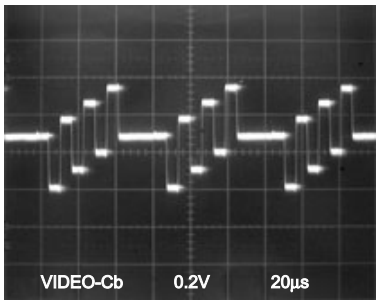
WF3 J236



WF4 Pin 26 of CN1502



WF5 Pin 28 of CN1502



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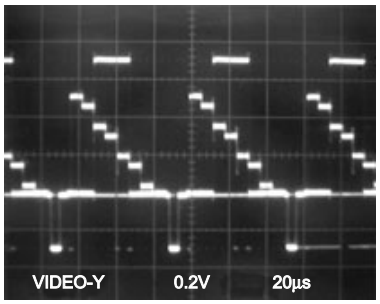

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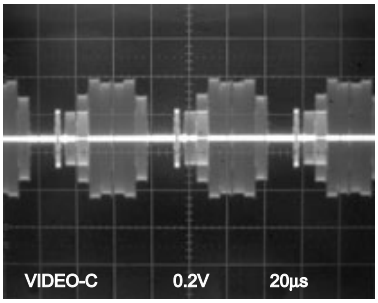
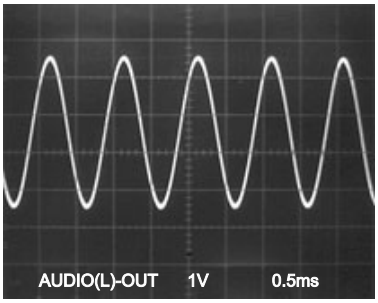
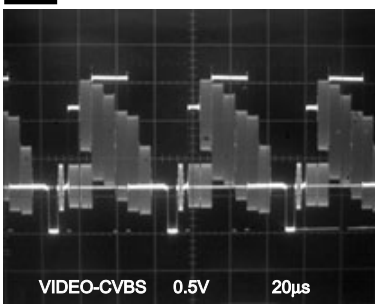


WF8 Pin 14 of CN1502



WF9 Pin 6 of IC1515



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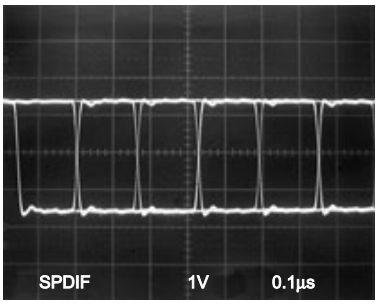
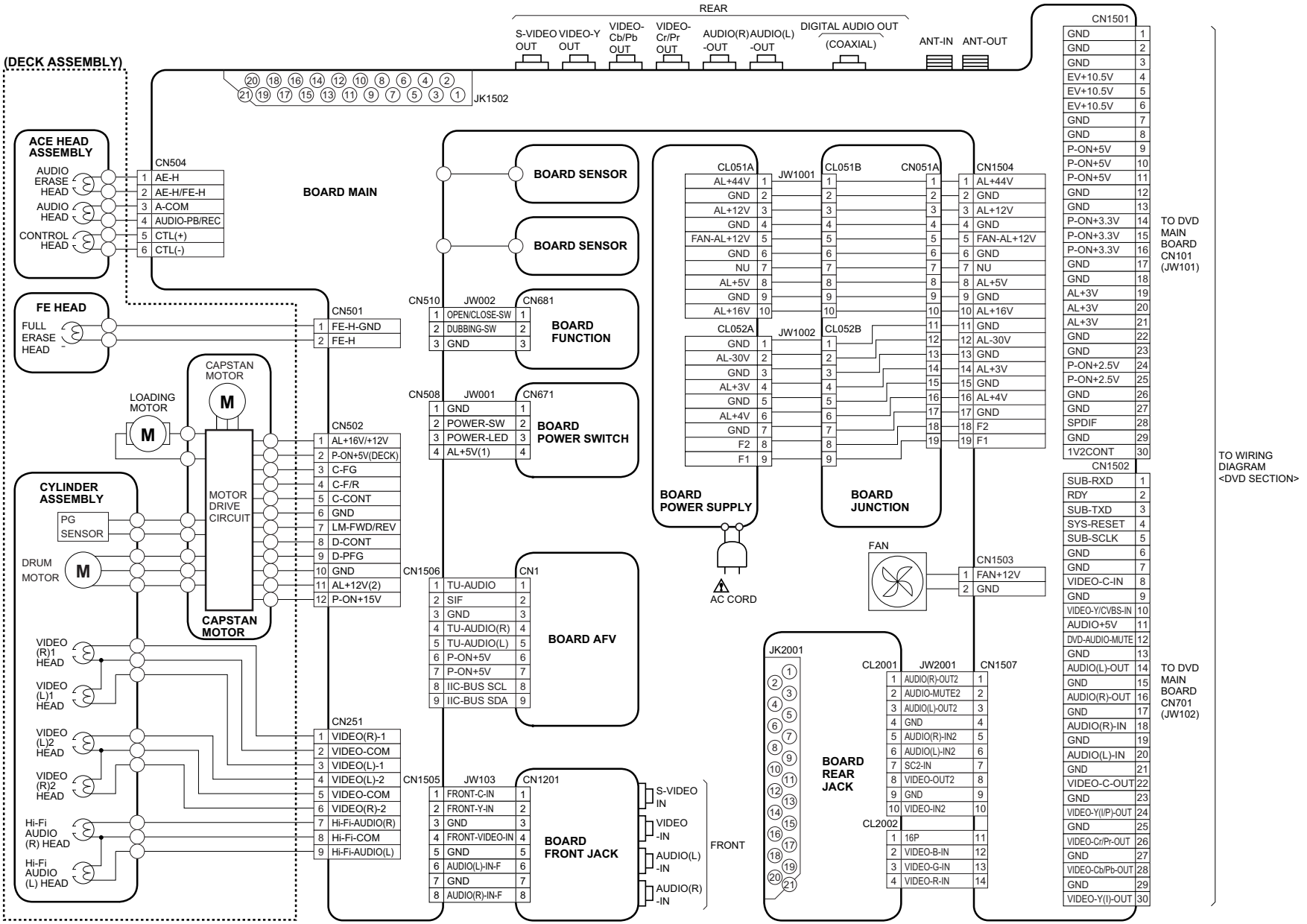


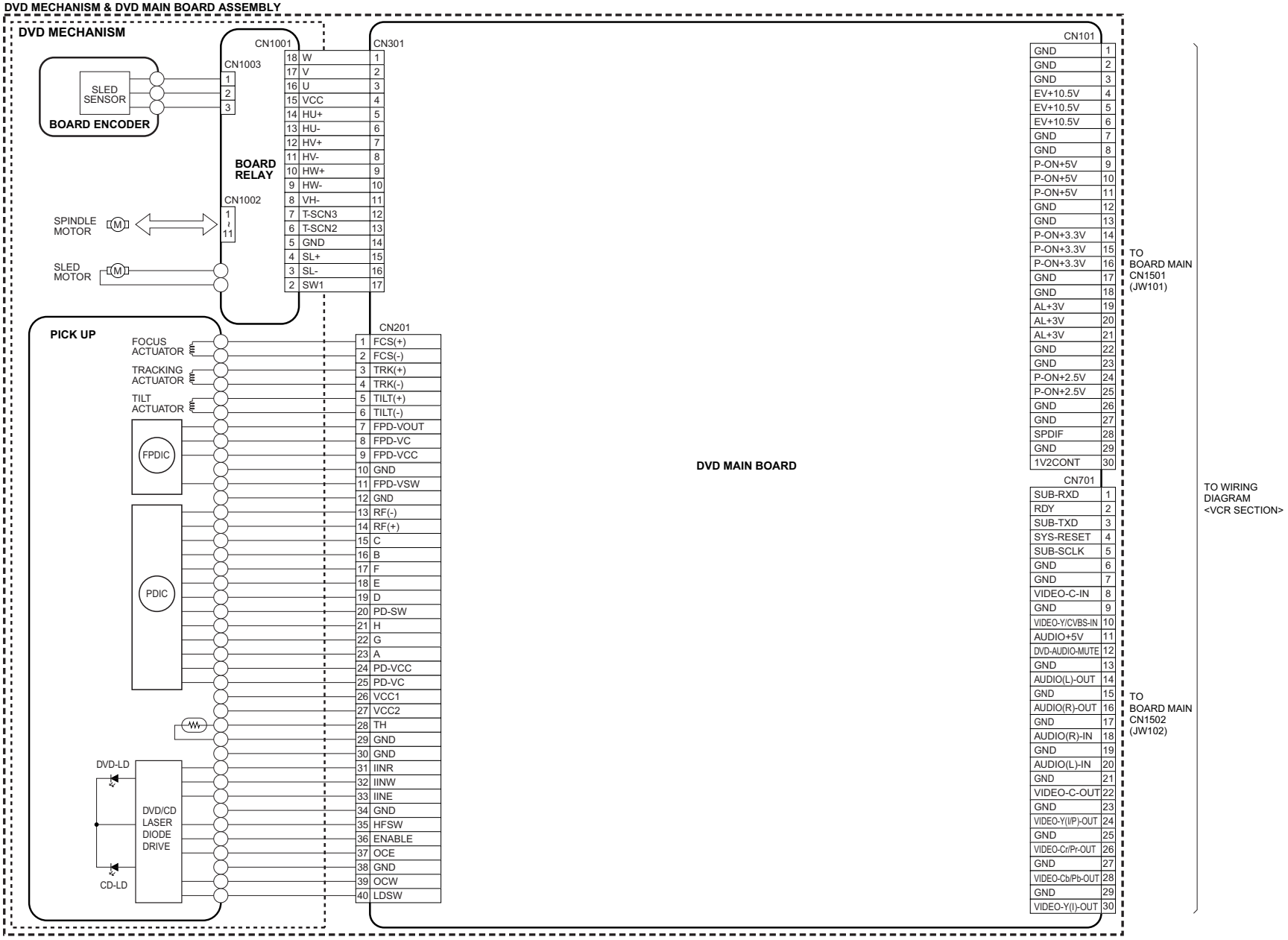
WIRING DIAGRAM < VCR SECTION >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



WIRING DIAGRAM < DVD SECTION >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



IC PIN FUNCTION DESCRIPTIONS

< VCR Section >

Comparison Chart of Models and Marks

Model	Mark
D-VR16SB	A
D-VR40SF	B

IC501(SERVO / SYSTEM CONTROL IC)

Pin No.	Mark	IN/ OUT	Signal Name	Function
1		IN	SC2-IN	Input Signal from Pin 8 of SCART2
2		IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
3		IN	DVD-POW-SAFETY	Abnormal Voltage Detection
4		IN	END-S	Tape End Position Detect Signal
5		IN	AFC	Automatic Frequency Control Signal
6		IN	V-ENV	Video Envelope Comparator Signal
7		IN	KEY-1	Key Scan Input Signal 1
8		IN	KEY-2	Key Scan Input Signal 2
9		IN	LD-SW	Deck Mode Position Detector Signal
10		IN	ST-S	Tape Start Position Detector Signal
11		OUT	FAN-CONT1	Fan Motor Control Signal
12		-	NU	Not Used
13		OUT	D-V- SYNC	Dummy V-sync Output
14		IN	REMOCON -IN	Remote Control Sensor
15		OUT	C-ROTA	Color Phase Rotary Changeover SIgnal
16		OUT	H-A-SW	Video Head Amp Switching Pulse
17		IN	H-A-COMP	Head Amp Comparator Signal
18		OUT	RF-SW	Video Head Switching Pulse
19		OUT	Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
20		OUT	I/P-SW	Progressive/Interlace Data Output
21		-	NU	Not Used
22		OUT	VIDEO-SW1	Video Input Select Signal
23		OUT	VIDEO-SW2	Video Input Select Signal
24		OUT	VIDEO-SW3	Video Input Select Signal
25		OUT	REG-CONT2	Power Regulator Control Signal
26		OUT	DVD-AUDIO-MUTE	DVD Audio Mute Control Signal
27		OUT	RGB-THROUGH	SCART 2 RGB Through Control Signal
28		OUT	AUDIO-MUTE-2	Audio Mute Control Signal
29		OUT	DVD-AUDIO-MUTE2	DVD Audio Mute Control Signal
30		OUT	DVD-SCART-AUDIO-MUTE	DVD SCART Audio Mute Control Signal
31		IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab="L"/ With out Record tab="H")
32		IN	P-DOWN -H	Power Voltage Down Detector Signal
33		OUT	D-REC-H	Delayed Record Signal
34		IN	RESET	System Reset Signal (Reset="L")
35		IN	Xcin	Sub Clock
36		OUT	Xcout	Sub Clock
37		-	Vcc	Vcc
38		IN	Xin	Main Clock Input
39		OUT	Xout	Main Clock Input
40		-	GND	Vss(GND)
41		OUT	PWR-SW	DVD Power Supply Control Signal
42		OUT	REGULATOR-CONTROL	Power Regulator Control Signal
43		IN	CLKSEL	Clock Select (GND)
44		IN	OSCin	Clock Input for letter size
45		OUT	OSCout	Clock Output for letter size
46		-	NUB	Not Used
47		IN	LP	LP
48		IN	FSC-IN [4.43MHz]	4.43MHz Clock Input
49		-	OSDVss	OSDVss
50		IN	OSD-V-IN	OSD Video Signal Input
51		-	NU	Not Used

Pin No.	Mark	IN/ OUT	Signal Name	Function
52		OUT	OSD-V-OUT	OSD Video Signal Output
53		-	OSDVcc	OSDVcc
54		-	HLF	LPF Connected Terminal (Slicer)
55	A	-	NU	Not Used
	B	IN	COLOR-IN	SECAM or MESECAM Chroma Video Input Signal at Super Impose
56		IN	DAVN-L	VPS/PDC Data Receive = “L”
57		-	NU	Not Used
58		IN	C-SYNC	Composite Synchronized Pulse
59		OUT	8POUT-1	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2
60		OUT	8POUT-2	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2
61	A	-	NU	Not Used
	B	IN	SECAM-H	SECAM Mode at High
62	A	-	NU	Not Used
	B	OUT	TRICK-H	Special playback = “H” in SECAM Mode
63		OUT	SYSTEM-RESET	System Reset Signal
64		IN	READY/ BUSY	Ready/Busy communication Control with Main Micro Controller
65		OUT	S-DATA-OUT	Communication of Data from VCR Micro Controller
66		IN	S-DATA-IN	Communication of Data to VCR Micro Controller
67		OUT	S-CLOCK	Communication of Clock with VCR Micro Controller
68		OUT	DRV-DATA	VFD Driver IC Control Data
69		OUT	DRV-STB	VFD Driver IC Chip Select Signal
70		OUT	DRV-CLK	VFD Driver IC Control Clock
71		OUT	IIC-BUS-SCL	IIC BUS Control Clock
72		IN/ OUT	IIC-BUS-SDA	IIC BUS Control Data
73		-	NU	Not Used
74		-	NU	Not Used
75		OUT	P-ON-H	Power On Signal to High

Pin No.	Mark	IN/ OUT	Signal Name	Function
76		OUT	C-CONT	Capstan Motor Control Signal
77		OUT	D-CONT	Drum Motor Control Signal
78		OUT	C-F/R	Capstan Motor FWD/ REV Control Signal (FWD=“L”/REV=“H”)
79		IN	S-REEL	Supply Reel Rotation Signal
80		IN	T-REEL	Take Up Reel Rotation Signal
81		OUT	LM-FWD/ REV	Loading Motor Control Signal
82		OUT	OUTPUT-SELECT	Output Select
83		OUT	VCR-AUDIO-MUTE	Audio Mute Control Signal (Mute = “H”)
84		OUT	C-POW-SW	Capstan Power Switching Signal
85		IN	VCR POW-SAFETY	VCR Power Supply Safety Signal
86		IN	A-MODE	Hi-Fi Tape Detection Signal
87		IN	C-FG	Capstan Motor Rotation Detection Pulse
88		-	AMPVss	AMPVss
89		IN	DVD-POW-SAFETY	Abnormal Voltage Detection
90		IN	D-PFG	Drum Motor Phase/ Frequency Generator
91		-	AMPVREF out	V-Ref for CTL AMP
92		-	AMPVREF in	V-Ref for CTL AMP
93		-	P80/C	P80/C Terminal
94		IN/ OUT	CTL (-)	Playback/Record Control Signal (-)
95		IN/ OUT	CTL (+)	Playback/Record Control Signal (+)
96		-	AMPC	CTL AMP Connected Terminal
97		-	CTL	To Monitor for CTL AMP Output
98		-	AMPVcc	AMPVcc
99		-	AVcc	A/D Converter Power Input/ Standard Voltage Input
100		IN	AGC	IF AGC Comparator Signal

Notes:

Abbreviation for Active Level:

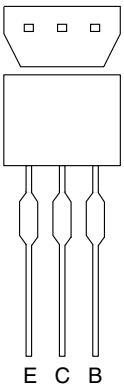
PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

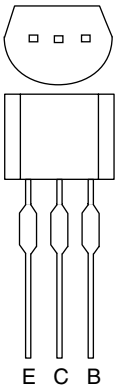
IC612 (FIP DRIVER)

Pin No.	IN/ OUT	Signal Name	Name Function
1	OUT	POWER-LED	Power LED Signal Output
2	OUT	VCR-LED	VCR Mode LED Signal Output
3	OUT	DVD-LED	DVD Mode LED Signal Output
4	-	NU	Not Used
5	IN	OSC	Oscillator Input
6	-	NU	Not Used
7	IN	DIN	Serial Data Input
8	IN	CLK	Clock Input
9	IN	STB	Serial Interface Strobe
10	-	NU	Not Used
11	-	NU	Not Used
12	-	VSS	GND
13	-	VDD	Power Supply
14	-	NU	Not Used
15	-	NU	Not Used
16	-	NU	Not Used
17	-	NU	Not Used
18	-	NU	Not Used
19	-	NU	Not Used
20	OUT	c	Segment Output
21		b	
22		a	
23		d	
24		e	
25		f	
26		i	
27		h	
28		g	
29	-	NU	Not Used
30	-	VEE	Pull Down Level
31	-	NU	Not Used
32	-	NU	Not Used
33	-	NU	Not Used
34	-	NU	Not Used
35	-	NU	Not Used
36	OUT	7G	Grid Output
37		6G	
38		5G	
39		4G	
40		3G	
41		2G	
42		1G	
43	-	VDD	Power Supply
44	-	VSS	GND

LEAD IDENTIFICATIONS



KRA103M-AT/P
KRA104M-AT/P
KRC103M-AT/P
KTA-1266-GR-AT/P
KTA1267-Y-AT/P
KTC3199-(BL,Y)-AT/P



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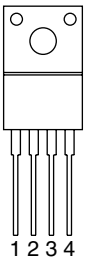
KTA1281Y-AT/P
KTC3198-Y-AT/P
KTC3203-Y-AT/P
KTC3205-Y-AT/P

PQ070XF01SZH



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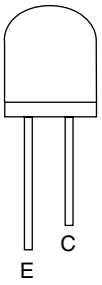

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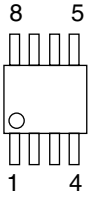

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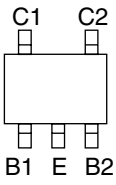

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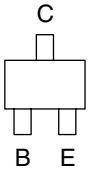
KTC3875S-(GR,Y)-RTK/P
KTC3879-Y-RTK/P



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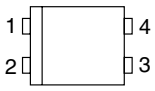
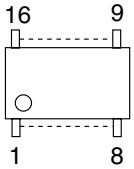


1: Anode
2: Cathode
3: Emitter
4: Collector

MM1637XVBE



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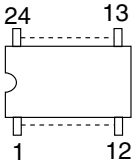

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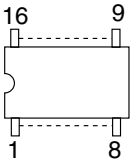

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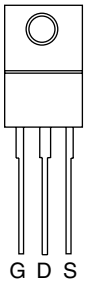

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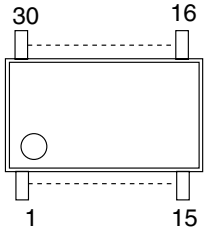
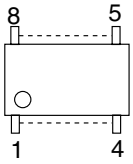


MM1636XWRE



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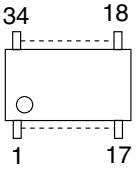

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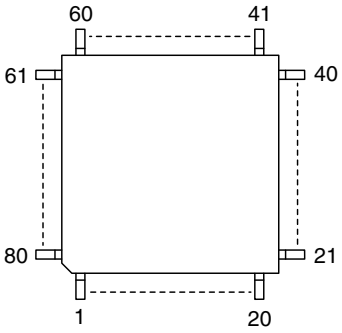

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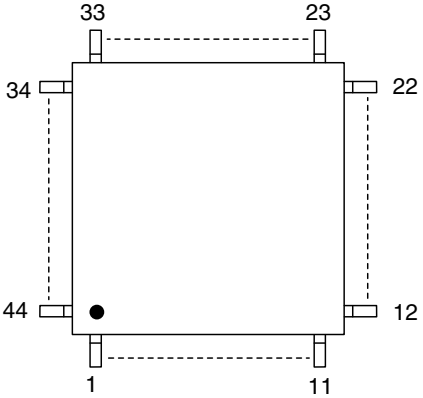
PT6315(L)



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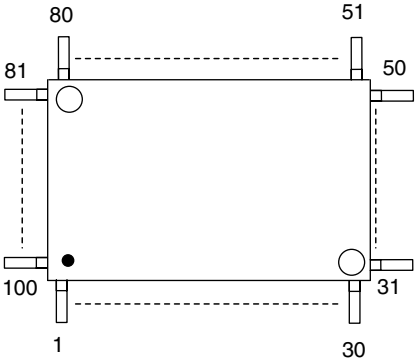
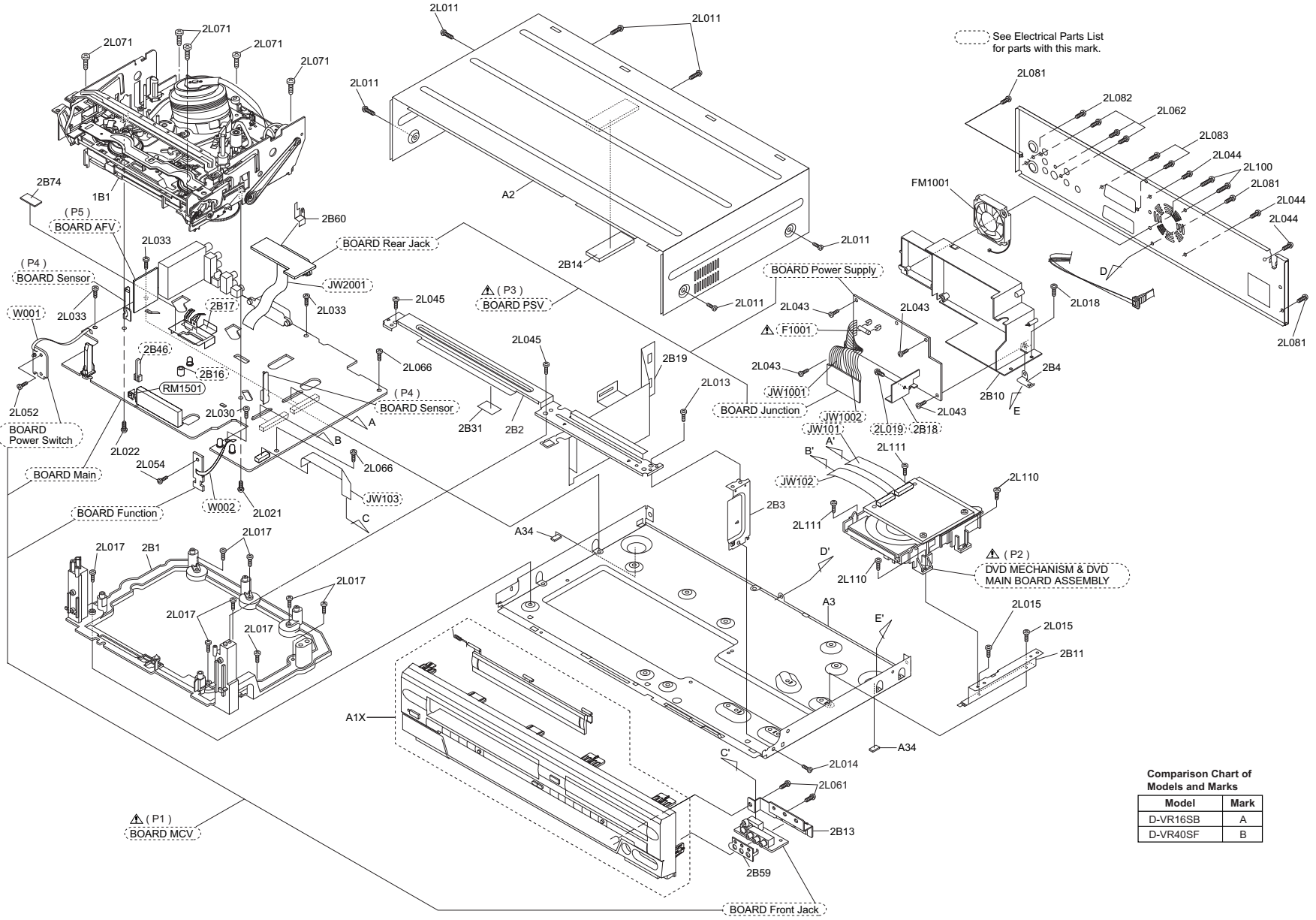


Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS

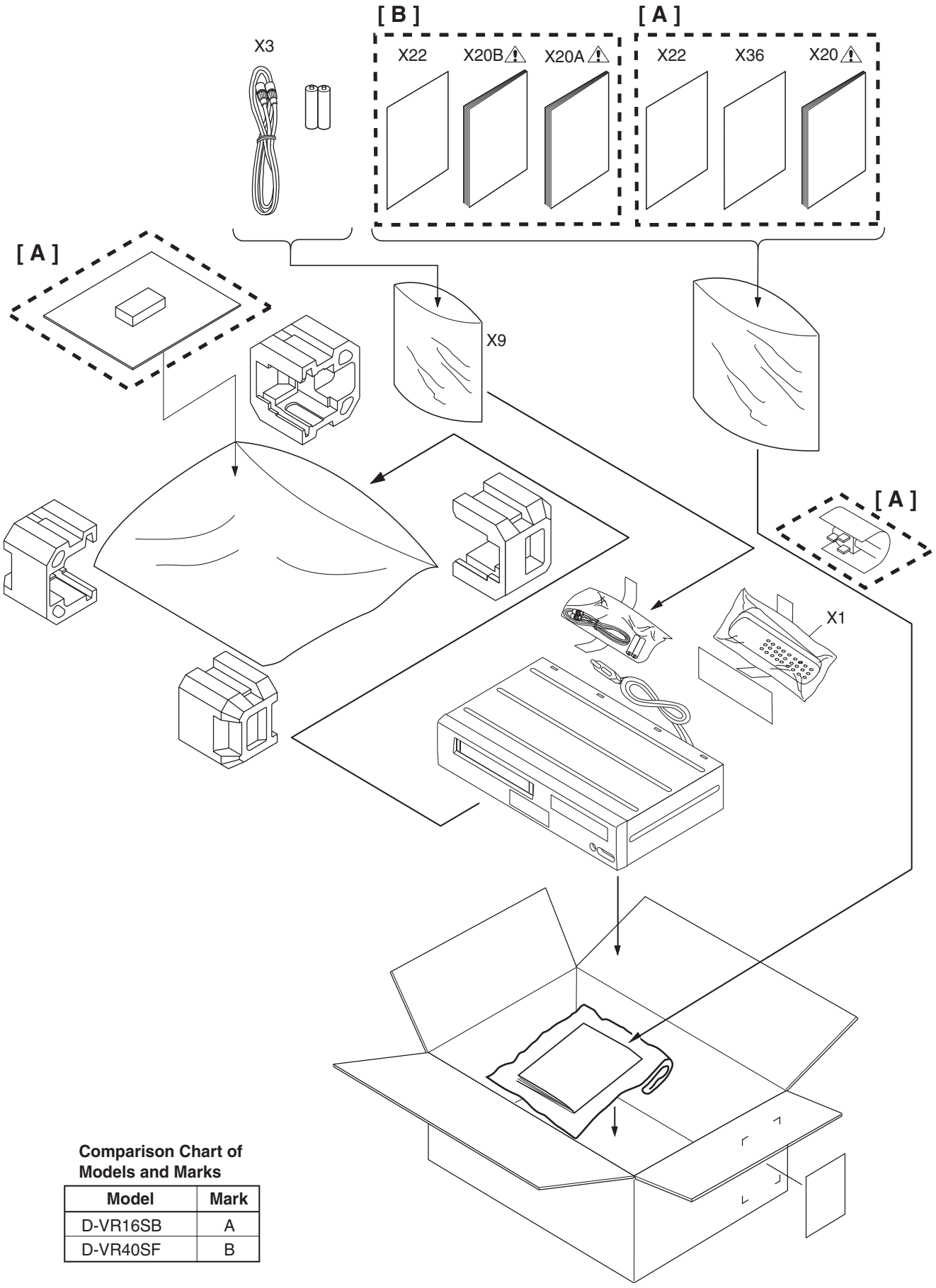
Cabinet



Comparison Chart of Models and Marks

Model	Mark
D-VR16SB	A
D-VR40SF	B

Packing



Comparison Chart of Models and Marks

Model	Mark
D-VR16SB	A
D-VR40SF	B

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

Comparison Chart of Models and Marks

Model	Mark
D-VR16SB	A
D-VR40SF	B

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	A1X	A	P000464270	1VM222253	PANEL FRONT E9BA1BD
	A1X	B	P000465080	1VM222255	PANEL FRONT E9BA2FD
	A2		P000464260	0VM101356D	COVER TOP E9400UD
	A3			0VM101353G	MAIN CHASSIS E9400UD
	A34			0VM406940	FOOT H5100UD
	1B1		P000464340	N25E0FL	DECK ASSEMBLY CZD014/VM25E0
	2B1			1VM120055D	DECK PEDESTAL E9600UD
	2B2			0VM204534C	FRONT BRACKET E9400UD
	2B3			0VM416269A	FRONT BRACKET R E9400UD
	2B4			0VM416272	PLATE EARTH E9400UD
	2B10			1VM120056B	BOARD HOLDER E9700ED
	2B11			1VM421062C	BRACKET R E9600UD
	2B13			0VM416273	JACK BRACKET E9400UD
	2B14			0VM416664C	CUSHION RUBBER E9400UD
	2B19			1VM320806	RADIATION SHEET E9700ED
	2B31			0VM413956	TAPE HIMELON H9206JD
	2B59			1VM322618	JACK EARTH PLATE E9A80UD
	2B74			1VM424514	SHIELD RUBBER E9B00ED
	2L011			GBCC3050	SCREW C-TIGHT M3X5 BIND HEAD +
	2L013			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L014			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L015			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	2L017			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	2L018			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L021			GBCP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L022			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L030			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L033			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L043			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L044			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L045			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L052			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	2L054			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	2L061			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	2L062			GBHB3080	SCREW B-TIGHT M3X8 BIND HEAD+
	2L066			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	2L071			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	2L081			GBHS3060	S-TIGHT SCREW M3X6 BIND HEAD+BLACK
	2L082			GBHS3060	S-TIGHT SCREW M3X6 BIND HEAD+BKACK
	2L083			GBHP3080	SCREW P-TIGHT M3X8 BIND HEAD+ BLK
	2L100			1VM420034A	P-TIGHT SCREW M3X34 E9400UD
	2L110			GBJS3100	SCREW S-TIGHT M3X10 BIND HEAD+
	2L111			GBJP3120	SCREW P-TIGHT M3*12 BIND+
	FM1001		P000464330	MMEZR12NH003	MOTOR DC FAN D06K-12TS7 01(AX)
ACCESSORIES					
	X1	A	P000464360	NB309BD	REMOTE CONTROL UNIT NB309BD
	X1	B	P000465070	NB312ED	REMOTE CONTROL UNIT NB312ED
	X3		P000460030	WPZ0122LG001	RF CORD PAL 1.2M
	X9			1VM422101	REMOCON BAG E9704ED
⚠	X20	A	P000464280	1VMN22711	OWNERS MANUAL(ENG) E9BA1BD
⚠	X20A	B	P000465090	1VMN22716	OWNERS MANUAL(FRE) E9BA2FD
⚠	X20B	B	P000465110	1VMN23000	OWNERS MANUAL(ITA) E9BA2FD
	X22	A	P000464290	1VMN22998	QUICK GUIDE E9BA1BD
	X22	B	P000465100	1VMN22999	QUICK GUIDE E9BA2FD
	X36	A		1VMN22863	REGISTE RATION CARD E7B71BD

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

Comparison Chart of Models and Marks

Model	Mark
D-VR16SB	A
D-VR40SF	B

DVD MECHANISM & DVD MAIN BOARD ASSEMBLY

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠	P2	A	P000464350	N78EBCBN	DVD MECHANISM & DVD MAIN BOARD ASSEMBLY
⚠	P2	B	P000465140	N78ECCFN	DVD MECHANISM & DVD MAIN BOARD ASSEMBLY

BOARD MCV

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠	P1	A	P000464320	1VSA14541	BOARD MCV
⚠	P1	B	P000465130	1VSA14661	BOARD MCV Consists of the following:
				———	BOARD MAIN (MCV-A)
				———	BOARD POWER SWITCH (MCV-B)
				———	BOARD FUNCTION (MCV-C)
				———	BOARD FRONT JACK (MCV-D)
	P4			1VSA11699	BOARD SENSOR

BOARD MAIN

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				———	BOARD MAIN (MCV-A) Consists of the following:
			CAPACITORS		
	C251			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C252			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C253			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C254			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C301			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C302			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C303			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C305			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C306			CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V
	C307			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/ 50V
	C308			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C311			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C312			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C313			CE1JMASSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C314			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C315			CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V
	C316			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C317			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C322			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C324			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C325			CHD1JK30B822	CHIP CERAMIC CAP. B K 8200pF/50V
	C326			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C328			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C329			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C330			CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C331			CE0KMASDL221	ELECTROLYTIC CAP. 220µF/6.3V M
	C333			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C334			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C335			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C336			CHD1JJ3CH221	CHIP CERAMIC CAP. CH J 220pF/50V
	C337			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C339			CHD1JJ3CH121	CHIP CERAMIC CAP. CH J 120pF/50V
	C340			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C341			CHD1JD3CH100	CHIP CERAMIC CAP.(1608) CH D 10pF/ 50V
	C342			CHD1JJ3CH102	CHIP CERAMIC CAP.(1608) CH J 1000pF/ 50V
	C343			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C344			CP1EMAVSB4R7	ELECTROLYTIC CAP. 4.7µF/25V M NP H7
	C345			CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/50V M H7
	C347			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C349			CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/50V M H7
	C350			CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1µF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C370	B		CCA1CMT0Y103	CERAMIC CAP.(AX) Y M 0.01μF/16V
	C371	B		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V
	C372	B		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C373	B		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C374	B		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C375	B		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C376	B		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V
	C377	B		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C378	B		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C379	B		CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47μF/50V M H7
	C381	B		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C382	B		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C383	B		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C384	B		CE1JMAVSL2R2	ELECTROLYTIC CAP. 2.2μF/50V M H7
	C402			CMA1JJP00183	FILM CAP.(P) 0.018μF/50V J
	C403			CCD2AKS0B471	CERAMIC CAP. B K 470pF/100V
	C404			CE0KMASSL221	ELECTROLYTIC CAP. 220μF/6.3V M H7
	C405			CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C407			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C408			CHD1JK30B182	CHIP CERAMIC CAP. B K 1800pF/50V
	C409			CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C410			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C411			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C412			CE0KMAVSL330	ELECTROLYTIC CAP. 33μF/6.3V M H7
	C413			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C414			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V
	C415			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C416			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C417			CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C418			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C419			CHD1JJ3CH221	CHIP CERAMIC CAP. CH J 220pF/50V
	C421			CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C451			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C452			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C453			CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7
	C454			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C455			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C456			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C457			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C458			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C461			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C462			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C463			CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7
	C464			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C465			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C466			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C467			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C468			CE0KMAVSL221	ELECTROLYTIC CAP. 220μF/6.3V M H7
	C469			CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7
	C470			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C471			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C472			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C473			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C474			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C475			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C476			CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C477			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C478			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C479			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C480			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C481			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C482			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C483			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C484			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C485			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C486			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C487			CE1CMAVSL470	ELECTROLYTIC CAP. 47μF/16V M H7
	C488			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C502			CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022μF/ 50V
	C505			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C506			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C507			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C508			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C509			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C510			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C511			CHD1JJ3CH101	CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V
	C512			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C514			CHD1JK30B331	CHIP CERAMIC CAP. B K 330pF/50V
	C515			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C516			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C517			CCA1EZTFZ223	CERAMIC CAP.(AX) F Z 0.022µF/25V
	C518			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C519			CHD1JJ3CH561	CHIP CERAMIC CAP. CH J 560pF/50V
	C521			CE0KMAVSL220	ELECTROLYTIC CAP. 22µF/6.3V M H7
	C522			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C524			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C527			CCA1JKT0B101	CERAMIC CAP.(AX) B K 100pF/50V
	C531			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C533			CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/ 50V
	C534			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C535			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C536	B		CHD1JJ3CH561	CHIP CERAMIC CAP. CH J 560pF/50V
	C538			CHD1JJ3CH181	CHIP CERAMIC CAP. CH J 180pF/50V
	C539			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C540			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C541			CHD1JJ3CH180	CHIP CERAMIC CAP. CH J 18pF/50V
	C542			CHD1JJ3CH180	CHIP CERAMIC CAP. CH J 18pF/50V
	C543			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C544			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C545			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C546			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C547			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C548			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C549			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C550			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C553			CE1AMAVSL220	ELECTROLYTIC CAP. 22µF/10V M H7
	C554			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C555			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C560			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C611			CE1JMASSL220	ELECTROLYTIC CAP. 22µF/50V M H7
	C612			CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/ 50V
	C614			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C615			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C616			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1500			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1501			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1502			CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1503			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1506			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1507			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1508			CCA1EKT0B104	CERAMIC CAP.(AX) B K 0.1µF/25V
	C1509			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1510			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1511			CE1CMASDL221	ELECTROLYTIC CAP. 220µF/16V M
	C1512			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C1513			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1517			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1518			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1519			CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1µF/10V
	C1520			CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1µF/10V
	C1521			CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1µF/10V
	C1524			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C1525			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1526			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1527			CE1EMASDL470	ELECTROLYTIC CAP. 47µF/25V M
	C1528			CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C1529			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1530			CE1CMASDL220	ELECTROLYTIC CAP. 22µF/16V M
	C1532			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1533			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1534			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1535			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1536			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1537			CE0KMASSL221	ELECTROLYTIC CAP. 220µF/6.3V M H7
	C1538			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1539			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1540			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1541			CE0KMASSL101	ELECTROLYTIC CAP. 100µF/6.3V M H7

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C1542			CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C1543			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1544			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C1546			CHD1JZ30F103	CHIP CERAMIC CAP. F Z 0.01µF/50V
	C1547			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1548			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1549			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1550			CP0KMASNC101	ELECTROLYTIC CAP. 100µF/6.3V M NP
	C1551			CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C1552			CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C1553			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1554			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1555			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1556			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C1557			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1558			CHD1JJ3CH101	CHIP CERAMIC CAP.(1608) CH J 100pF/ 50V
	C1560			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1563			CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C1564			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1565			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1566			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1567			CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1569			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1571			CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C1572			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1573			CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1574			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1575			CDA1EKP0X183	SEMICONDUCTOR CAP. SR K 0.018µF/25V
	C1576			CHD1JJ3CH271	CHIP CERAMIC CAP.(1608) CH J 270pF/ 50V
	C1577			CHD1JJ3CH271	CHIP CERAMIC CAP.(1608) CH J 270pF/ 50V
	C1578			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1580			CE1CMASDL220	ELECTROLYTIC CAP. 22µF/16V M
	C1581			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1582			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1583			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1584			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1585			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M
	C1586			CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1587			CE0KMASDL101	ELECTROLYTIC CAP. 100µF/6.3V M

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C1588			CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1589			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1590			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1591			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/ 50V M
	C1592			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1593			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1594			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1595			CE1CMAVSL220	ELECTROLYTIC CAP. 22µF/16V M H7
	C1596			CE1CMASDL220	ELECTROLYTIC CAP. 22µF/16V M
	C1597			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1598			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C1599			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1600			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1601			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C1602			CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C1603			CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7
	C1604			CP1JMAVSB1R0	ELECTROLYTIC CAP. 1µF/ 50V M H7 NP
	C1605			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1606			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1607			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1608			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1609			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1610			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1611			CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C1612			CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/6.3V H7
	C1614			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1615			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1616			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1617			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C1618			CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C1619			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1620			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1621			CE1JMASDL100	ELECTROLYTIC CAP. 10µF/50V M
	C1623			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/ 50V
	C1626			CHD1CZ30F224	CHIP CERAMIC CAP. F Z 0.22µF/16V
	C1627			CHD1CZ30F224	CHIP CERAMIC CAP. F Z 0.22µF/16V
	C1628			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1629			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C1630			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C1631			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1632			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1633			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1634			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1635			CE1JMASDLR33	ELECTROLYTIC CAP. 0.33μF/50V M
	C1636			CE0KMASDL101	ELECTROLYTIC CAP. 100μF/6.3V M
	C1637			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1639			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1640			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1643			CE0KMASDL470	ELECTROLYTIC CAP. 47μF/6.3V M
	C1648			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1649			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1657			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1658			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1659			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1660			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1661			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1662			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1663			CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V
	C1664			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1665			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1671			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1672			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1673			CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1675			CE1EMASDL470	ELECTROLYTIC CAP. 47μF/25V M
	C1677			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1680			CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/ 50V
	C1681			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1684			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1685			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1686			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1687			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1688			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1689			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1691			CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1692			CE0KMASDL471	ELECTROLYTIC CAP. 470μF/6.3V M
	C1693			CE0KMASDL471	ELECTROLYTIC CAP. 470μF/6.3V M

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	C1694			CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/10V
	C1695			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1696			CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/ 50V M
	C1697			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1698			CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1699			CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1700			CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/10V
	C1701			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C1702			CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	CONNECTORS				
	CN1503		P000465470	J3PHC02JG017	PH CONNECTOR (WHITE) TOP 2P B2B-PH-K-S(LF)
	CN1504		P000465460	J322C19TG001	242 SERIES CONNECTOR 224202119W1
	CN1505			JCFEJ08JG001	FE CONNECTOR TOP 8P 08FE-BT-VK-N
	CN1506	A		E9B01AFV	BOARD AFV ASSEMBLY E9B01AFV
	CN1506	B		E9B02AFV	BOARD AFV ASSEMBLY E9B02AFV
	DIODES				
	D301			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D370	B		NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D502		P000468270	NPQZ10GDS957	LED(GREEN) 204-10GD/ S957
	D503		P000468270	NPQZ10GDS957	LED(GREEN) 204-10GD/ S957
	D510			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D511			NDTA0DZ7R5BS	ZENER DIODE DZ-7.5BSAT265
	D512			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D555		P000492990	QPQPS1R563ST	LED SIR-563ST3F P
	D1501			NDLZ001N5397	DIODE 1N5397-B
	D1502			NDLZ001N5397	DIODE 1N5397-B
	D1506			NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1507		P000468260	NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1508			NDTC0DZ4R3BS	ZENER DIODE DZ-4.3BSCT265
	D1511			NDTB00DZ10BS	ZENER DIODE DZ-10BSBT265
	D1512			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1513			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1516			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1517			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1518			NDTB00DZ18BS	ZENER DIODE DZ-18BSBT265
	D1519			NDTB00DZ11BS	ZENER DIODE DZ-11BSBT265
	D1521			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1523			NDTB0DZ5R6BS	ZENER DIODE DZ-5.6BSBT265
	D1525			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1526			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1528			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	D1529			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1531			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1532			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1534			NDTB00DZ33BS	ZENER DIODE DZ-33BSBT265
	D1535			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1537			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1538			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1539			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1540			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1542			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1548			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1549			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	ICS				
	IC301		P000465590	QSZBA0RSY020	IC Y/C/A LA71750EM-MPB-E
	IC370	B	P000465860	QSZBA0TSY019	IC SECAM LA70100M-TRM-E
	IC451		P000465600	QSZBA0RSY033	IC HIFI LA72648M-MPB-E
	IC501		P000465580	QSZAB0RHT100	SYSCON IC M3776AMCH-AE8GP
	IC612		P000465560	NSZBA0RG2009	VFD DRIVER IC PT6315(L)
	IC1501		P000465570	NSZBA0TTY142	IC(ANALOG SW) CD4052BPWR
	IC1504		P000457260	QSZBA0SSH054	VOLTAGE REGULATOR PQ070XF01SZH
	IC1505		P000457260	QSZBA0SSH054	VOLTAGE REGULATOR PQ070XF01SZH
	IC1506		P000457180	NSZBA0STY173	IC OP AMP RC4580IP
	IC1507		P000457280	QSZBA0TMM150	VIDEO SWITCH MM1697AJBE
	IC1508		P000465630	QSZBA0TTS163	IC SWITCH TC4053BF(EL N F)
	IC1509		P000465630	QSZBA0TTS163	IC SWITCH TC4053BF(EL N F)
	IC1510		P000465630	QSZBA0TTS163	IC SWITCH TC4053BF(EL N F)
	IC1511			QSZBA0TSY049	IC VPS/PDC SLICER LC74793NJM-TLM-E
	IC1513		P000459910	NSZBA0SJY035	IC OP AMP KIA4558P/P
	IC1514		P000457270	QSZBA0TMM102	DRIVER FOR DVD MM1637XVBE
	IC1515		P000465610	QSZBA0TMM108	DRIVER FOR DVD MM1636XWRE
	IC1516		P000457270	QSZBA0TMM102	DRIVER FOR DVD MM1637XVBE
	IC1518		P000465620	QSZBA0TMM152	AV SWITCH MM1443XJBE
	COILS				
	L251			LLAXKATTU5R6	INDUCTOR 5.6μH-K-26T
	L302			LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L370	B		JW5.0T	BOARD JUMPER D0.6-P5.0
	L402			LLARKBSTU470	INDUCTOR 47μH-K-5FT
	L451			LLARKBSTU470	INDUCTOR 47μH-K-5FT
	L452			JW5.0T	BOARD JUMPER D0.6-P5.0
	L501			LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L502			JW5.0T	BOARD JUMPER D0.6-P5.0
	L503			LLAXKATTU1R8	INDUCTOR 1.8μH-K-26T
	L1501			LLBD00PKV022	CHOKE COIL 47μH
	L1503			JW5.0T	BOARD JUMPER D0.6-P5.0

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	L1504			JW5.0T	BOARD JUMPER D0.6-P5.0
	L1505			LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L1506			JW5.0T	BOARD JUMPER D0.6-P5.0
	L1507			LLBD00PKV022	CHOKE COIL 47μH
	L1508			LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L1509			LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L1510			LLBD00PKV022	CHOKE COIL 47μH
	L1513			LLAXKATTUR47	INDUCTOR(0.47μH K) LAP02TAR47K
	L1515			-------	BEAD CORE ASSEMBLY E9770ED
	L1515-1			JW35.0T	PCB JUMPER D0.6-P35.0
	L1515-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1517			JW5.0T	BOARD JUMPER D0.6-P5.0
	TRANSISTORS				
	Q301			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q302			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q401			QQ2Z0RN1511F	CHIP TRANSISTOR RN1511(TE85R.F)
	Q403			NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P
	Q404			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q405			NQSZ0KRA103M	RES. BUILT-IN TRANSISTOR KRA103M-AT/P
	Q406			NQ1YKTC3875S	CHIP TRANSISTOR KTC3875S-Y-RTK/P
	Q451			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q506			NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12
	Q513			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q514			NQS5KTC3199P	TRANSISTOR KTC3199-BL-AT/P
	Q515			NQS5KTC3199P	TRANSISTOR KTC3199-BL-AT/P
	Q516			NQ14KTC3875S	CHIP TRANSISTOR KTC3875S-GR-RTK/P
	Q517			NQ14KTC3875S	CHIP TRANSISTOR KTC3875S-GR-RTK/P
	Q518			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q519			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1501			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1502			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1507			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1508			NQVYKTA1281P	TRANSISTOR KTA1281Y-AT/P
	Q1509			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1510			NQSYKTC3205P	TRANSISTOR KTC3205-Y-AT/P
	Q1511			NQSYKTA1273P	TRANSISTOR KTA1273-Y-AT/P
	Q1512			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1513			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1514			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1515			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1516			NQSZ0KRA104M	RES. BUILT-IN TRANSISTOR KRA104M-AT/P

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	Q1517			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1518			NQSYKTC3205P	TRANSISTOR KTC3205-Y-AT/P
	Q1519			NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1520			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1521			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1522			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1524			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1525			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1527			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1528			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1529			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1530			NQ1YKTC3875S	CHIP TRANSISTOR KTC3875S-Y-RTK/P
	Q1531			NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1532			NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1533			NQ1YKTC3879P	TRANSISTOR KTC3879-Y-RTK/P
	Q1534			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1537			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1538			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1539			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1540			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1542			NQSYKTC3198P	TRANSISTOR KTC3198-Y-AT/P
			RESISTORS		
	R251			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R252			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R301			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R303			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R305			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R310			JW5.0T	BOARD JUMPER D0.6-P5.0
	R314			RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R316			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R319			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R320			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R321			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R322			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R323			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R324			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R325			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R326			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R327			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R328			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R330			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R331			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R332			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R333			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R334			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R335			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R336			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R337			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R345			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R346			RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R370	B		RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R371	B		RCX6JATZ0562	CARBON RES. 1/6W J 5.6k Ω
	R372	B		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R401			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R402			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R404			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R405			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R406			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R407			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R408			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R409			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R410			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R411			RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R412			RRXAJR5Z0121	CHIP RES. 1/10W J 120 Ω
	R413			RRXAJR5Z0334	CHIP RES. 1/10W J 330k Ω
	R414			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R415			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R416			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R417			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R418			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R419			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R420			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R421			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R451			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R452			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R453			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R454			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R462			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R463			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R464			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R465			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R466			RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R467			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R469			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R470			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R479			RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R480			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R481			RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R482			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R483			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R484			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R509			RRXAJR5Z0181	CHIP RES. 1/10W J 180 Ω
	R510			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R511			RCX6GATZ0362	CARBON RES. 1/6W G 3.6k Ω
	R512			RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R513			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R514			RCX6GATZ0103	CARBON RES. 1/6W G 10k Ω
	R516			RCX6GATZ0471	CARBON RES. 1/6W G 470 Ω
	R517			RCX4JATZ0271	CARBON RES. 1/4W J 270 Ω
	R519			RCX6GATZ0223	CARBON RES. 1/6W G 22k Ω
	R523			RCX6GATZ0152	CARBON RES. 1/6W G 1.5k Ω
	R525			RRXAJR5Z0394	CHIP RES. 1/10W J 390k Ω
	R526			RCX6JATZ0394	CARBON RES. 1/6W J 390k Ω
	R528			RCX6GATZ0472	CARBON RES. 1/6W G 4.7k Ω
	R536			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R537			RRXAJR5Z0681	CHIP RES. 1/10W J 680 Ω
	R539			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R540			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R541			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R542			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R543			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R544			RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R545			RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R546			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R553			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R555			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R567			RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R568			RRXAJR5Z0224	CHIP RES. 1/10W J 220k Ω
	R569			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R570			RCX6JATZ0472	CARBON RES. 1/6W J 4.7k Ω
	R572			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R574			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R575			RRXAJR5Z0334	CHIP RES. 1/10W J 330k Ω
	R576	A		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R577			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R578			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R581			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R582			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R583			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R584			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R585			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R586			RRXAJR5Z0821	CHIP RES. 1/10W J 820 Ω
	R588			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R595			RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R596			RCX6JATZ0151	CARBON RES. 1/6W J 150 Ω
	R597			RCX6JATZ0221	CARBON RES. 1/6W J 220 Ω
	R598			RCX6JATZ0221	CARBON RES. 1/6W J 220 Ω
	R601			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R602			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R603			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R604			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R605			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R606			RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R607			RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R608			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R617			JW5.0T	BOARD JUMPER D0.6-P5.0
	R618			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R621			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R622			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R623			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R624			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R625			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R626			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R627			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R628			RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R629			RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R630			RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R631			RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R632			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R643			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R644			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R645			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R646			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R647			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R648			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R649			RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R650			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R651			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R653			RCX6JATZ0272	CARBON RES. 1/6W J 2.7k Ω
	R654			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R655			RCX6JATZ0272	CARBON RES. 1/6W J 2.7k Ω
	R656			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R657			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1500			RCX4JATZ0181	CARBON RES. 1/4W J 180 Ω
	R1501			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1502			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1504			RCX4JATZ0181	CARBON RES. 1/4W J 180 Ω
	R1505			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R1507			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1510			RCX4JATZ0181	CARBON RES. 1/4W J 180 Ω
	R1512			RCX4JATZ0181	CARBON RES. 1/4W J 180 Ω
	R1513			RCX6JATZ0273	CARBON RES. 1/6W J 27k Ω
	R1514			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1519			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1522			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1523			RCX4JATZ0391	CARBON RES. 1/4W J 390 Ω
	R1524			RCX6JATZ0473	CARBON RES. 1/6W J 47k Ω
	R1525			RCX6JATZ0821	CARBON RES. 1/6W J 820 Ω
	R1526			RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1527			RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1528			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1529			RCX6JATZ0152	CARBON RES. 1/6W J 1.5k Ω
	R1530			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1531			RCX4JATZ0561	CARBON RES. 1/4W J 560 Ω
	R1532			RCX4JATZ0561	CARBON RES. 1/4W J 560 Ω
	R1533			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1536			RCX4JATZ0152	CARBON RES. 1/4W J 1.5k Ω
	R1537			RCX4JATZ0152	CARBON RES. 1/4W J 1.5k Ω
	R1538			RCX4JATZ0331	CARBON RES. 1/4W J 330 Ω
	R1539			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1540			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1541			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1543			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1544			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1547			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1550			RCX6JATZ0472	CARBON RES. 1/6W J 4.7k Ω
	R1551			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1552			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1553			RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1554			RCX4JATZ0270	CARBON RES. 1/4W J 27 Ω
	R1555			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1556			RRXAFR5H1502	CHIP RES. 1/10W F 15k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1557			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1558			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1559			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1560			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1561			RRXAFR5H1200	CHIP RES. 1/10W F 120 Ω
	R1562			RRXAFR5H1501	CHIP RES. 1/10W F 1.5k Ω
	R1563			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1564			RCX6JATZ0223	CARBON RES. 1/6W J 22k Ω
	R1565			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1566			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1567			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1568			RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1569			RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1570			RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1571			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1572			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1573			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1574			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1576			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1578			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1579			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1581			RCX4JATZ0822	CARBON RES. 1/4W J 8.2k Ω
	R1582			RCX4JATZ0822	CARBON RES. 1/4W J 8.2k Ω
	R1587			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1589			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1590			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1591			RRXAJR5Z0302	CHIP RES. 1/10W J 3k Ω
	R1592			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1593			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R1594			RRXAJR5Z0302	CHIP RES. 1/10W J 3k Ω
	R1595			RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R1596			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1597			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1598			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1599			RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1600			RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1603			RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1604			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1605			RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1606			RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1607			RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1608			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1609			RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1610			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1611			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1612			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1613			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1616			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1619			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1620			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1630			RRXAFR5H8201	CHIP RES. 1/10W F 8.2k Ω
	R1631			RRXAFR5H8201	CHIP RES. 1/10W F 8.2k Ω
	R1632			RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R1633			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1634			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1636			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1637			RRXAFR5H1302	CHIP RES. 1/10W F 13k Ω
	R1638			RRXAFR5H1302	CHIP RES. 1/10W F 13k Ω
	R1639			RRXAJR5Z0133	CHIP RES. 1/10W J 13k Ω
	R1640			RRXAJR5Z0133	CHIP RES. 1/10W J 13k Ω
	R1642			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1643			RCX6JATZ0153	CARBON RES. 1/6W J 15k Ω
	R1644			RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1647			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1648			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R1650			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1651			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1652			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1653			RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R1654			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1656			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1657			RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1658			RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1659			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1660			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1661			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1662			RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1663			RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1664			RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1665			JW5.0T	BOARD JUMPER D0.6-P5.0
	R1666			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1669			RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R1670			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1671			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1672			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1673			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1676			RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R1677			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1678			RCX4JATZ0331	CARBON RES. 1/4W J 330 Ω
	R1679			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1680			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1681			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1682			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1683			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1684			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1685			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1686			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1688			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1689			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1690			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1691			RCX6JATZ0221	CARBON RES. 1/6W J 220 Ω
	R1692			RCX6JATZ0221	CARBON RES. 1/6W J 220 Ω
	R1693			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1694			RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1695			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1696	A		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1697			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1698			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1699			RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	R1700			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1702			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1703			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1704			RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R1705			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1706			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1708			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R1709			RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R1710			RCX4JATZ0561	CARBON RES. 1/4W J 560 Ω
	R1711			RCX4JATZ0561	CARBON RES. 1/4W J 560 Ω
	R1712			RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R1713			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1714			RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1718			RRXAJR5Z0163	CHIP RES. 1/10W J 16k Ω
	R1719			RRXAJR5Z0163	CHIP RES. 1/10W J 16k Ω
	R1720			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1721			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1722			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1723			RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R1724			RRXAJR5Z0153	CHIP RES. 1/10W J 15k Ω
	R1725			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1726			RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1727			RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R1728			RRXAJR5Z0153	CHIP RES. 1/10W J 15k Ω
	R1729			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	SWITCHES				
	SW506		P000465640	SSC0101MCE03	LEAF SWITCH MXS01830MVP0
	SW507		P000465650	SSR0106KB003	ROTARY MODE SWITCH SSS-53MD
	SW521			SST0101HH013	TACT SWITCH KSM0614B
	SW522			SST0101HH013	TACT SWITCH KSM0614B
	SW523			SST0101HH013	TACT SWITCH KSM0614B
	SW524			SST0101HH013	TACT SWITCH KSM0614B
	SW525			SST0101HH013	TACT SWITCH KSM0614B
	SW526			SST0101HH013	TACT SWITCH KSM0614B
	SW527			SST0101HH013	TACT SWITCH KSM0614B
	SW528			SST0101HH013	TACT SWITCH KSM0614B
	SW601			SST0101HH013	TACT SWITCH KSM0614B
	SW603			SST0101HH013	TACT SWITCH KSM0614B
	SW605			SST0101HH013	TACT SWITCH KSM0614B
	MISCELLANEOUS				
	2B16			0VM409508	BUSH LED(F) H3700UD
	2B17			1VM420438	NEW SHIELD ASSEMBLY H9700ED
	2B46			0VM304573	ROHM HOLDER H7770JD
	FL601		P000465660	TVFD1C0FT049	VACUUM FLUORESCENT DISPLA 7-BT-301NS
	J202			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	JK1501		P000465540	JXRL030LY116	JACK RCA MSP-213V1-652-B NI L
	JK1502		P000459850	JXGL210LY008	RGB CONNECTOR MRC-021V-05 ABS(B110
	JK1504		P000465520	JXRL010LY140	JACK RCA MSP-281V41-B(B110)
	JK1505		P000465530	JXRL020LY120	JACK RCA MSP-382V-12 NILF
	JK1506		P000457070	JXEL040LY003	JACK S TYPE MDC-050V-2.4 LF(B110
	JW101		P000465700	WX1E9B00-003	FFC CABLE 30P FFC/P1.00/140
	JW102		P000465700	WX1E9B00-003	FFC CABLE 30P FFC/P1.00/140
	RM1501		P000457340	USESJRSKK039	REMOTE RECEIVER PIC-37043LU

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	PS502			QPWZP1302C70	PHOTO INTERRUPTER RPI-302C70
	TP301			JW11.5T	BOARD JUMPER D0.6-P11.5
	TP501			JW5.0T	BOARD JUMPER D0.6-P5.0
	TP502			JW7.0T	BOARD JUMPER D0.6-P7.0
	TP503			JW7.5T	BOARD JUMPER D0.6-P7.5
	TP504			JW28.0T	BOARD JUMPER D0.6-P28.0
	TU1501	A	P000460020	UTUNPLGAL017	TUNER UNIT TMFE2-301A
	TU1501	B	P000461900	UTUNPSLAL005	TUNER UNIT TMFE2-401A
	VR501			VRCB104HH014	CARBON P.O.T. VZ067TL1 B104 PB(F)
	X301		P000468200	FXC445LLN004	XTAL 4.433619MHz
	X501		P000468220	FXD126LCHE01	QUARTS CRYSTAL 12.000000MHz
	X502		P000459810	FXC323LQUA02	XTAL QTF38-32768K125P20L

BOARD POWER SWITCH

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				----------	BOARD POWER SWITCH (MCV-B) Consists of the following:
	DIODE				
	D673		P000468280	NPQZ1CHJGTNN	LED(GREEN) LTL1CHJGTNN
	SWITCH				
	SW673			SST0101HH013	TACT SWITCH KSM0614B
	MISCELLANEOUS				
	JW001		P000465730	WX1E9B00-007	FLAT CABLE 4P AWG26#2651/P2.0/100

BOARD FUNCTION

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				----------	BOARD FUNCTION (MCV-C) Consists of the following:
	SWITCHES				
	SW681			SST0101HH013	TACT SWITCH KSM0614B
	SW682			SST0101HH013	TACT SWITCH KSM0614B
	MISCELLANEOUS				
	JW002		P000465710	WX1E9B00-004	FLAT CABLE 3P AWG26#2651/P2.0/80

BOARD FRONT JACK

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				----------	BOARD FRONT JACK (MCV-D) Consists of the following:
	CAPACITORS				
	C1205			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1206			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	CONNECTOR				
	CN1201			JCFEJ08JG001	FE CONNECTOR TOP 8P 08FE-BT-VK-N
	DIODES				
	D1544			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1545			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D1546			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	D1547			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
			RESISTORS		
	R1201			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1202			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1203			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1204			RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1205			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
			MISCELLANEOUS		
	JK1201		P000465500	JXRL010LY101	JACK RCA(YELLOW) MTJ-032-11B-40 FE01
	JK1202		P000465510	JXRL010LY102	JACK RCA(WHITE) MTJ-032-11B-41 FE01
	JK1203		P000465490	JYRL010LY024	JACK RCA(RED) MTJ-032-11A-31 FE01
	JK1204		P000457070	JXEL040LY003	JACK S TYPE MDC-050V-2.4 LF(B110
	JW103		P000465670	WX1E9700-002	FFC CABLE 8P FFC/P1.25/120

BOARD SENSOR

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P4		P000465450	1VSA11699	BOARD SENSOR Consists of the following:
			TRANSISTORS		
	Q503			NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12
	Q504			NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12

BOARD PSV

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
⚠ ⚠	P3 P3	A B	P000464310 P000465050	1VSA14525 1VSA14664	BOARD PSV BOARD PSV Consists of the following:
				-------	BOARD POWER SUPPLY (PSV-A)
				-------	BOARD JUNCTION (PSV-B)
				-------	BOARD REAR JACK (PSV-C)

BOARD POWER SUPPLY

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				-------	BOARD POWER SUPPLY (PSV-A) Consists of the following:
			CAPACITORS		
	C013			CE1JMASDL100	ELECTROLYTIC CAP. 10μF/50V M
	C014			CE1CMASDL471	ELECTROLYTIC CAP. 470μF/16V M
	C015			CE1CMASDL101	ELECTROLYTIC CAP. 100μF/16V M
	C017			CE0KMZADL472	ELECTROLYTIC CAP. 4700μF/6.3V SL
	C018			CE0KMASDL471	ELECTROLYTIC CAP. 470μF/6.3V M
	C020			CE1JMASDL220	ELECTROLYTIC CAP. 22μF/50V M
	C022			CE1GMASDL471	ELECTROLYTIC CAP. 470μF/35V M
⚠	C1001			CT2E683DC011	METALIZED FILM CAP. 0.068μF/250V K
	C1004			CA2H101S6016	ELECTROLYTIC CAP. 100μF/400V M
	C1005			CCD3AKPSL560	CERAMIC CAP. SL K 56pF/1KV
⚠	C1006			CCN2EMA0E222	SAFTY CAP. 2200pF/250V
	C1007			CE0KMASDL102	ELECTROLYTIC CAP. 1000μF/6.3V M
	C1013			CCA1JJT0B102	CERAMIC CAP.(AX) B J 1000pF/50V
	C1018			CE1AMASDL101	ELECTROLYTIC CAP. 100μF/10V M
	C1021			CCA1CMT0Y103	CERAMIC CAP.(AX) Y M 0.01μF/16V
	C1025			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C1029			CCA1CKT0X182	CERAMIC CAP.(AX) X K 1800pF/16V
	C1032			CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1033			CCD1JZSYV223	CERAMIC CAP. YV Z 0.022μF/50V
	C1035			CE0KMZADL332	ELECTROLYTIC CAP. 3300μF/6.3V SL
	C1036			CCD2JKP0B471	CERAMIC CAP. B K 470pF/500V
	C1037			CE1CMASDL102	ELECTROLYTIC CAP. 1000μF/16V M
	C1039			CE1CMASDL471	ELECTROLYTIC CAP. 470μF/16V M
	C1106			CE1GMASDL101	ELECTROLYTIC CAP. 100μF/35V M
	C2014			CCD2JKP0B103	CERAMIC CAP. B K 0.01μF/500V
			DIODES		
	D013			NDQZ000BA158	RECTIFIER DIODE BA158
	D014			NDQZ000SB190	SCHOTTKY BARRIER DIODE SB190
	D016			NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
	D017			NDTC00DZ15BS	ZENER DIODE DZ-15BSCT265
	D018			NDQZ000BA158	RECTIFIER DIODE BA158
	D019			NDQZ000FR203	RECTIFIER DIODE FR203-B/P
	D1001			NDLZ001N5397	DIODE 1N5397-B
	D1002			NDLZ001N5397	DIODE 1N5397-B
	D1003			NDLZ001N5397	DIODE 1N5397-B
	D1004			NDLZ001N5397	DIODE 1N5397-B
	D1006			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1008			NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1011			NDQZ000BA159	RECTIFIER DIODE BA159
	D1012			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1016			NDWZ000FR101	RECTIFIER DIODE FR101
	D1017			NDTB00DZ18BS	ZENER DIODE DZ-18BSBT265
	D1018			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1019			NDTB0DZ6R8BS	ZENER DIODE DZ-6.8BSBT265
	D1022			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1023			JW5.0T	BOARD JUMPER D0.6-P5.0
	D1024			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1025			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	D1030			NDWZ000SB240	SCHOTTKY BARRIER DIODE SB240-B/P
	D1031			NDQZ000SB390	SCHOTTKY BARRIER DIODE SB390
	D1032			NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
			IC		
⚠	IC1001			NPEA000EL817	PHOTOCOUPLER EL817A
			COILS		
	L010			LLBD00PKV022	CHOKE COIL 47μH
	L013			LLBD00PKV022	CHOKE COIL 47μH
	L1001			--------	BEAD CORE ASSEMBLY E9770ED

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	L1001-1			JW20.0T	PCB JUMPER D0.6-P20.0
	L1001-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1002			-------	BEAD CORE ASSEMBLY E9770ED
	L1002-1			JW20.0T	PCB JUMPER D0.6-P20.0
	L1002-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
⚠	L1003			LLBG00ZTU022	LINE FILTER 56MH TLF14CB5630R2
	L1004			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1005			-------	BEAD CORE ASSEMBLY E9770ED
	L1005-1			JW20.0T	PCB JUMPER D0.6-P20.0
	L1005-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1011			LLBD00PKV022	CHOKE COIL 47µH
	L1013			LLC180KKV007	POWER INDUCTORS TWKBNP-180K
			TRANSISTORS		
⚠	Q1001			QFWZ02SK3566	FET 2SK3566
	Q1003			QQSY2SC1815F	TRANSISTOR 2SC1815-Y(TE2 F T)
	Q1004			NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1008			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
			RESISTORS		
	R057			RRXAJR5Z0224	CHIP RES. 1/10W J 220k Ω
⚠	R1001			RCX2565FS001	CARBON RES. 1/2W K 5.6M Ω
	R1002			RCX4JATZ0564	CARBON RES. 1/4W J 560k Ω
	R1003			RCX4JATZ0564	CARBON RES. 1/4W J 560k Ω
	R1004			RN02JZLZ0823	METAL OXIDE FILM RES. 2W J 82k Ω
	R1005			RCX4JATZ0105	CARBON RES. 1/4W J 1M Ω
	R1006			RCX4JATZ0105	CARBON RES. 1/4W J 1M Ω
	R1007			RCX4JATZ0105	CARBON RES. 1/4W J 1M Ω
	R1008			RCX4GATZ0821	CARBON RES. 1/4W G 820 Ω
	R1010			RCX6JATZ0223	CARBON RES. 1/6W J 22k Ω
	R1011			RN01JZLZ01R3	METAL OXIDE FILM RES. 1W J 1.3 Ω
	R1020			RCX6JATZ0182	CARBON RES. 1/6W J 1.8k Ω
	R1021			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1022			RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1023			RRXAFR5H0222	CHIP RES.(1608) 1/10W F 2.2k Ω
	R1024			RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R1025			RRXAFR5H0562	CHIP RES. 1/10W F 5.6k Ω
	R1029			RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1032			RCX6JATZ0222	CARBON RES. 1/6W J 2.2k Ω
	R1035			RCX6JATZ0102	CARBON RES. 1/6W J 1k Ω
	R1036			RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1037			RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R1038			RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1039			RCX6JATZ0474	CARBON RES. 1/6W J 470k Ω
	R1040			RCX4JATZ08R2	CARBON RES. 1/4W J 8.2 Ω
	R1041			RCX4JATZ05R6	CARBON RES. 1/4W J 5.6 Ω
	R1043			RN012R7ZU001	METAL OXIDE FILM RES. 1W J 2.7 Ω
	R1059			RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1126			RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
			MISCELLANEOUS		
	2L019			GBJS3080	SCREW S-TIGHT M3X8 BIND HEAD+
	2B18		P000468060	1VM420987	HEAT SINK E6800ED
⚠	AC1001	A	P000468300	WAB0182LW016	POWER CORD PE8G2X91H0AA061
⚠	AC1001	B	P000468380	WAE0172LW011	POWER CORD PE8G2CG9G0AB05
⚠	F1001		P000459950	PAGC20BW3162	FUSE T1.6AL/250V
	FH1001			XH01Z00LY002	FUSE HOLDER MSF-015 LF (B110)
	FH1002			XH01Z00LY002	FUSE HOLDER MSF-015 LF (B110)
⚠	SA1001		P000457210	NVQZ10D471KB	SURGE ABSORBER 470V+-10PER
⚠	T0011		P000465550	LTTZPE0KT007	TRANS POWER 6711

BOARD JUNCTION

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				-------	BOARD JUNCTION (PSV-B) Consists of the following:
			CONNECTOR		
	CN051A		P000465480	JCTUB19TG002	242 SERIES CONNECTOR TUC-P19X-B1 WHT ST
			MISCELLANEOUS		
	JW1001		P000465680	WX1E9700-003	FLAT CABLE 10P AWG26#2651/P2.0/100
	JW1002		P000465690	WX1E9700-004	FLAT CABLE 9P AWG26#2651/P2.0/100

BOARD REAR JACK

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
				-------	BOARD REAR JACK (PSV-C) Consists of the following:
			CAPACITORS		
	C2003			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2004			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2005			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2006			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2007			CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C2008			CHD1JKB0B102	CHIP CERAMIC CAP. B K 1000pF/50V
	C2009			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C2010			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C2011			CHD1JKB0B102	CHIP CERAMIC CAP. B K 1000pF/50V
	C2012			CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C2013			CHD1JKB0B102	CHIP CERAMIC CAP. B K 1000pF/50V
			DIODES		
	D2001			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2002			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2003			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2004			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2005			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	D2006			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2007			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2008			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2009			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	D2010			NDTA00DZ11BS	ZENER DIODE DZ-11BSAT265
	COILS				
	L2001			--------	BEAD CORE ASSEMBLY E9770ED
	L2001-1			JW35.0T	PCB JUMPER D0.6-P35.0
	L2001-2			XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	TRANSISTORS				
	Q2002			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q2003			NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	RESISTORS				
	R2003			RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2004			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2005			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R2006			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R2007			RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R2008			RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R2009			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2010			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2011			RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R2012			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R2013			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	MISCELLANEOUS				
	2B60			1VM423185	21P PLATE EARTH E7B20ED
	JK2001		P000459840	JXGL210LY006	RGB CONNECTOR MRC-021V-03 ABS(B11
	JW2001		P000465720	WX1E9B00-005	FLAT CABLE 14P AWG26#2651/P2.0/85

BOARD AFV

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	P5 P5	A B	P000464300 P000465120	1VSA14515 1VSA14516	BOARD AFV BOARD AFV Consists of the following:
	CAPACITORS				
	C1			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C4			CHD1JJ3CH560	CHIP CERAMIC CAP. CH J 56pF/50V
	C5			CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C6			CHD1JJ3CH560	CHIP CERAMIC CAP. CH J 56pF/50V
	C7			CHD1JC3CH3R0	CHIP CERAMIC CAP. CH C 3pF/50V
	C8			CHD1JC3CH3R0	CHIP CERAMIC CAP. CH C 3pF/50V
	C11			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C12			CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C13			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C14			CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/ 50V
	C15			CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C16			CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C17			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C19			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C20			CE1JMASSL3R3	ELECTROLYTIC CAP. 3.3μF/50V M H7
	C21			CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C22			CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C23	B		CHD1AZ30F474	CHIP CERAMIC CAP. F Z 0.47μF/10V
	C24			CE1JMASSLR22	ELECTROLYTIC CAP. 0.22μF/50V M H7
	C27			CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1μF/50V
	CONNECTOR				
	CN1			JTED009ER045	ANGLE PIN HEADER 9P IMSA-6029B-1-09Z003-
	DIODE				
	D2			NDTZ01N4148M	SWITCHING DIODE 1N4148M
	IC				
	IC1		P000459920	NSZBA0SP3005	IC AUDIO PROCESSOR MSP3417G-QG-B8-V3
	COILS				
	L1			LLAXKATTU100	INDUCTOR 10μH-K-26T
	L2			JW5.0T	BOARD JUMPER D0.6-P5.0
	L3			LLAXKATTU180	INDUCTOR 18μH-K-26T
	L4			LLAXKATTU100	INDUCTOR 10μH-K-26T
	RESISTORS				
	R1			RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R2	B		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R4			RRXAJR5Z0124	CHIP RES. 1/10W J 120k Ω
	R5			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R6			RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R7	B		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	MISCELLANEOUS				
	X01		P000468230	FXD186LLN001	XTAL 18.432MHz

DECK MECHANISM SECTION

DVD VIDEO RECORDER & VIDEO CASSETTE RECORDER

D-VR16SB/D-VR40SF

Deck Mechanism Section

- **Standard Maintenance**
- **Mechanism Alignment Procedures**
- **Disassembly / Assembly of Mechanism**
- **Deck Exploded Views**
- **Deck Parts List**

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STANDARD MAINTENANCE

Service Schedule of Components

This maintenance chart shows you the standard of replacement and cleaning time for each part.
Because those may replace depending on environment and purpose for use, use the chart for reference.

h: Hours ○: Cleaning ●: Replace

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 h**	**2,000 h**	**3,000 h**	**4,000 h**
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	ACE Head Assembly			●	
B573, B574	Reel S, Reel T			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
*B86	F Brake Assembly (HI)		●		●
B133	Idler Assembly (HI)		●		●
B410	Pinch Arm Assembly		●		●
B414	M Brake (SP) Assembly (HI)		●		●
B416	M Brake (TU) Assembly (HI)		●		●
B525	LDG Belt		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% ethyl alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.
   * B73 ------ Recording model only
   * B86 ------ Not used in 2 head model.

Cleaning

Cleaning of Video Head

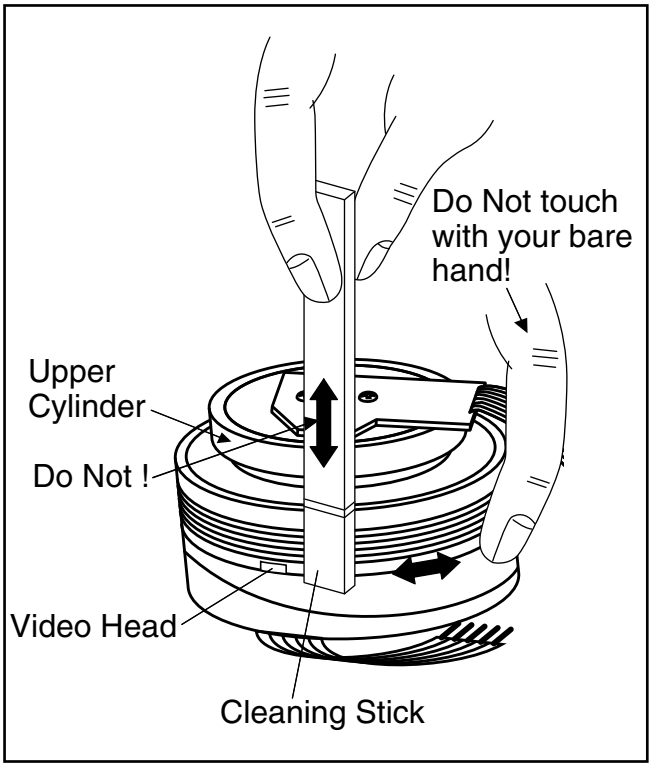
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% ethyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of ACE Head

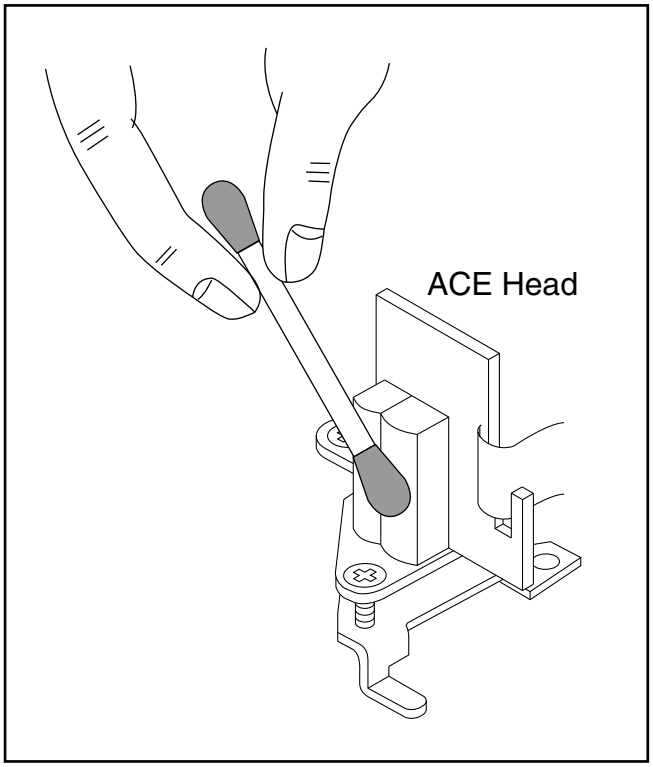
Clean the head with a cotton swab.

Procedure

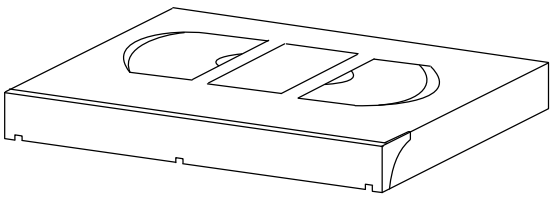
1. Remove the top cabinet.
2. Dip the cotton swab in 90% ethyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

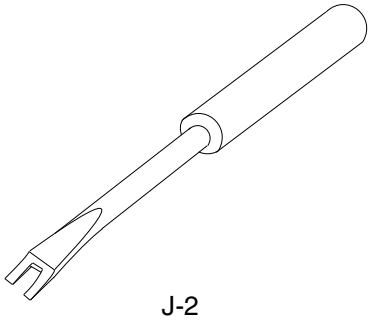
1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



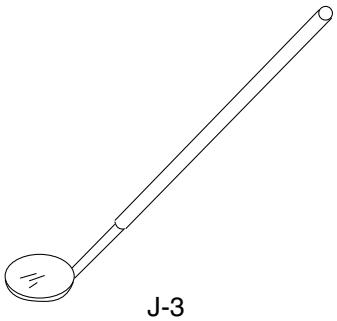
SERVICE FIXTURE AND TOOLS



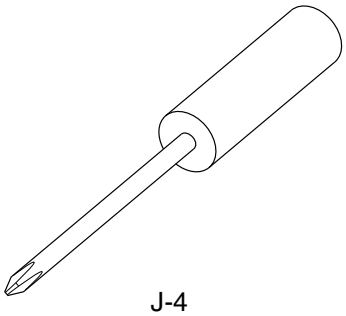
J-1-1, J-1-2



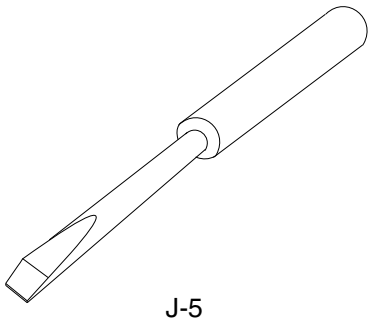
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL6A	Head Adjustment of ACE Head
J-1-2	Alignment Tape	FL6N8 (2 Head model) FL6NS8 (4 Head model)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

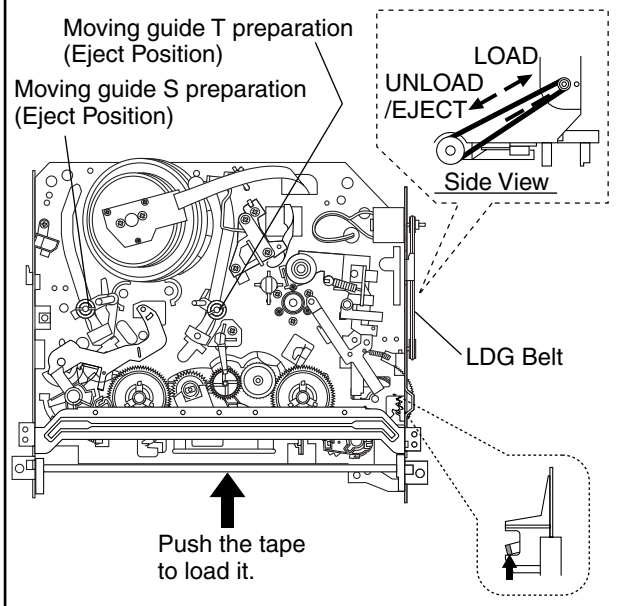


Fig. M1

Bottom View

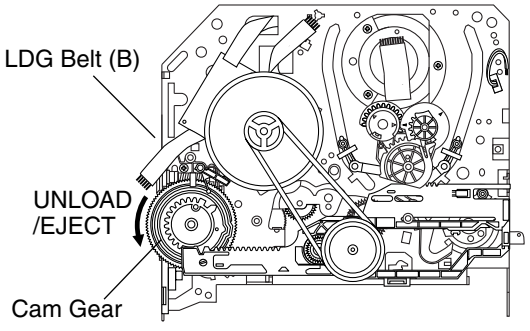


Fig. M2

1. Tape Interchangeability Alignment

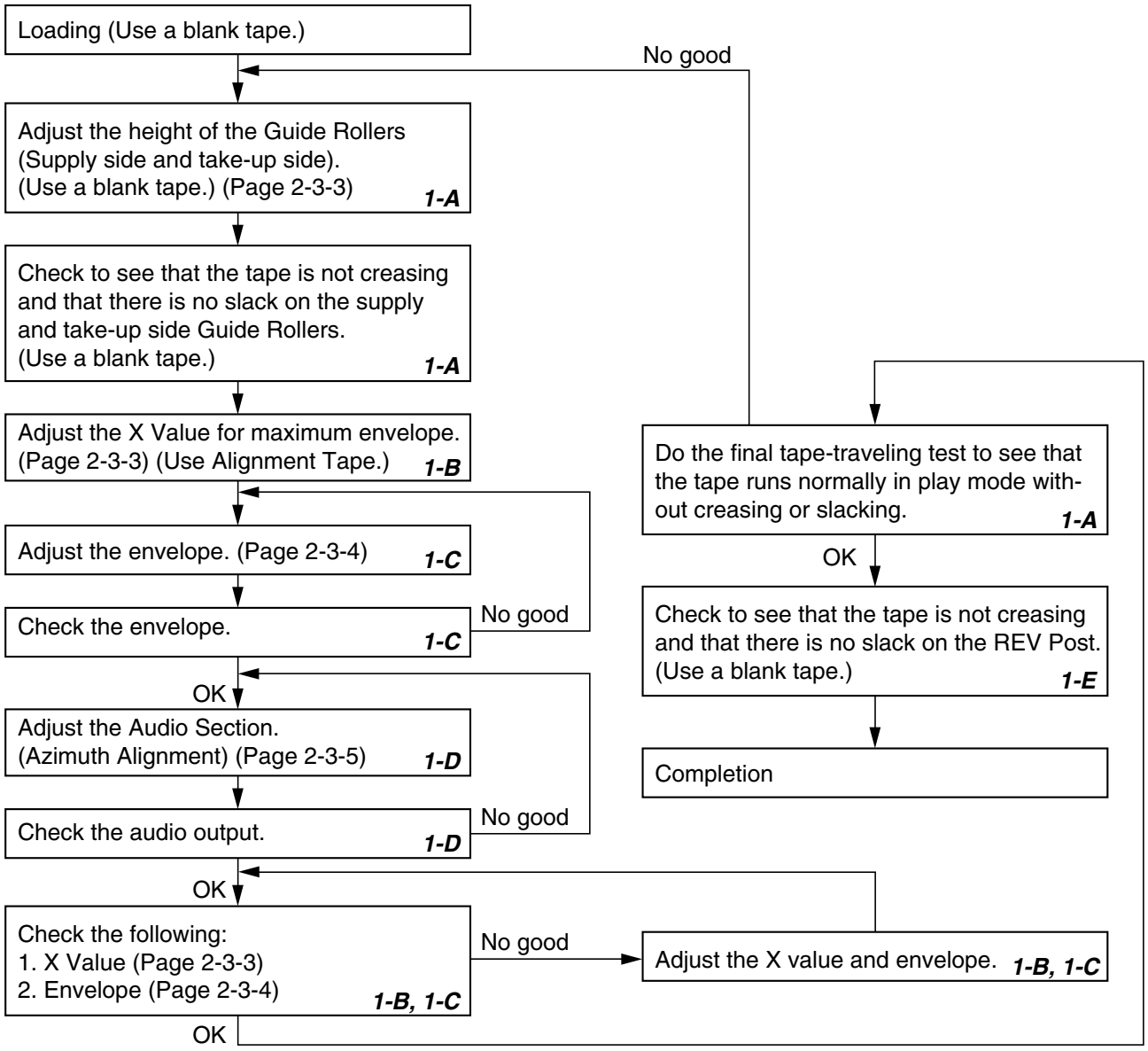
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL6NS8)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
No good
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (Page 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (Page 2-3-3) (Use Alignment Tape.) 1-B
Adjust the envelope. (Page 2-3-4) 1-C
Check the envelope. 1-C
No good
OK
Adjust the Audio Section. (Azimuth Alignment) (Page 2-3-5) 1-D
Check the audio output. 1-D
No good
OK
Check the following:
1. X Value (Page 2-3-3)
2. Envelope (Page 2-3-4) 1-B, 1-C
No good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Check to see that the tape is not creasing and that there is no slack on the REV Post. (Use a blank tape.) 1-E
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

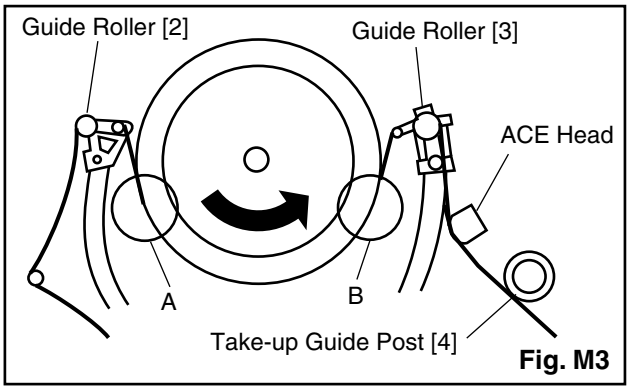


Fig. M3

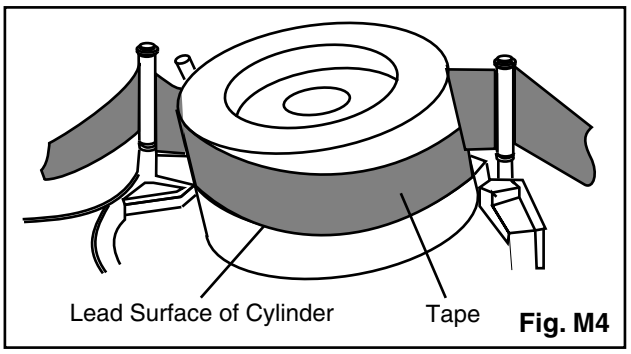


Fig. M4

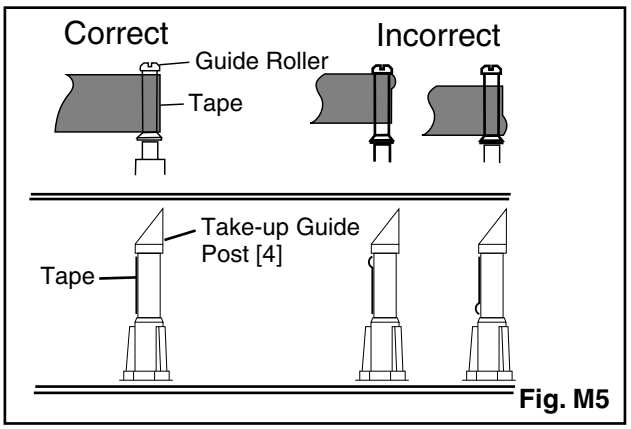


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)

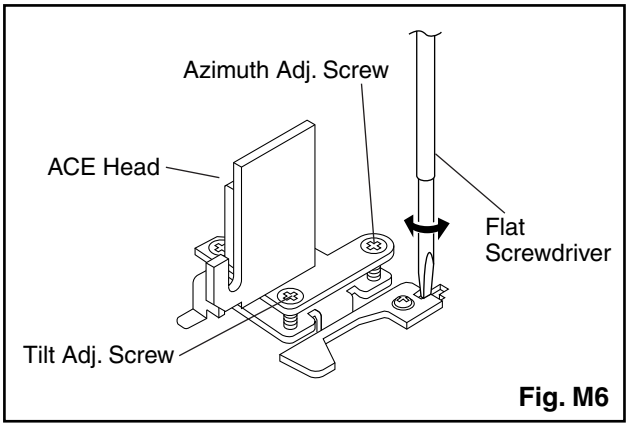


Fig. M6

1-B. X Value Alignment

Purpose:

To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP503 (CTL) on the Main CBA. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL6NS8) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing [PROGRAM ∧] button and then [▷] (VCR) button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)

5. To shift the CTL waveform, press [PROGRAM ∧] or [PROGRAM ∨] button. Then make sure that the maximum output position of PB FM envelope signal becomes within ±2ms from preset position.

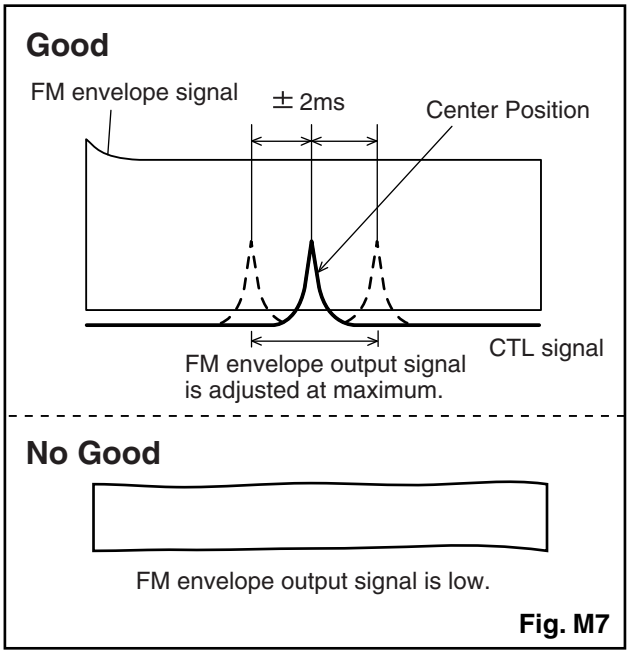


Fig. M7

6. Set the Tracking Control Circuit to the preset position by pressing [PROGRAM ∧] button and then [▷] (VCR) button on the unit.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture, adjust the Guide Rollers so that the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL6NS8). Set the Tracking Control Circuit to the preset position by pressing [PROGRAM ∧] button and then [▷] (VCR) button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

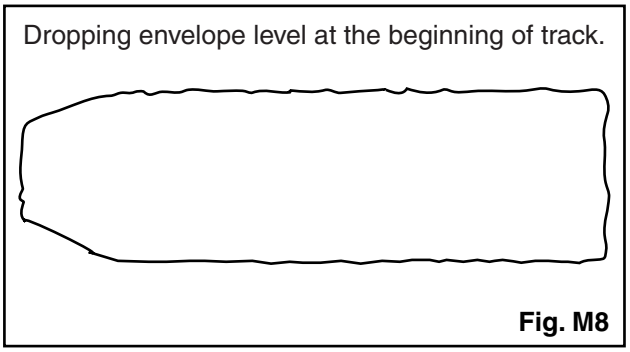


Fig. M8

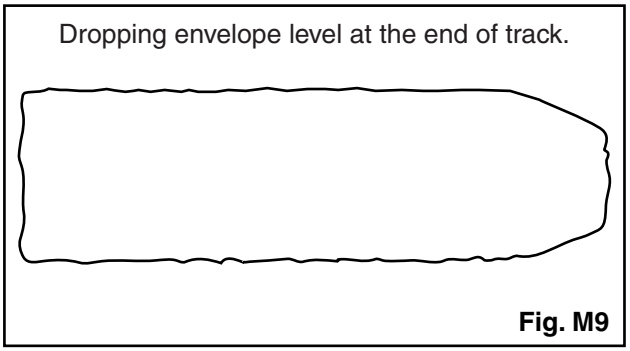


Fig. M9

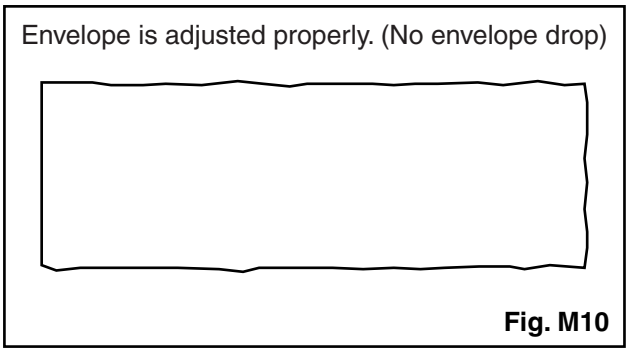


Fig. M10

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the [PROGRAM ∧] or [PROGRAM ∨] buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the [PROGRAM ∧] button on the unit to achieve 1/2 level of envelope should match the number of pushes of the [PROGRAM ∨] button on the unit from center. If required, redo the “X Value Alignment.”

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL6NS8) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Note: Upon completion of the adjustment of Azimuth Adj. Screw, check the X Value by pushing the [PROGRAM ∧] or [PROGRAM ∨] buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the [PROGRAM ∧] button on the unit to achieve 1/2 level of envelope should match the number of pushes of the [PROGRAM ∨] button on the unit from center. If required, redo the "X Value Alignment."

1-E. Checking and Alignment of Tape Path during reversing

Purpose:

To make sure that the tape path is well stabilized during reversing.

Symptom of Misalignment:

If the tape path is unstable during reversing, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Insert a blank cassette tape into the tray and set the unit to REV. Then confirm if the tape has been curled up or bent at the Take-up Guide Post[4] or REV Post[5]. (Refer to Fig. M11 and M12.)
2. When the tape has been curled up or bent, turn the alignment screw to adjust the height of REV Post. (Refer to Fig. M11 and M13.)

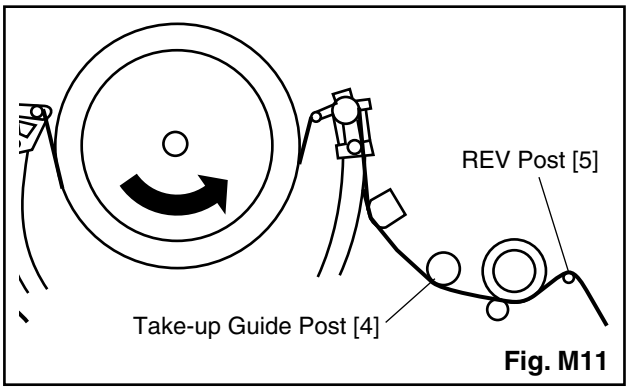


Fig. M11

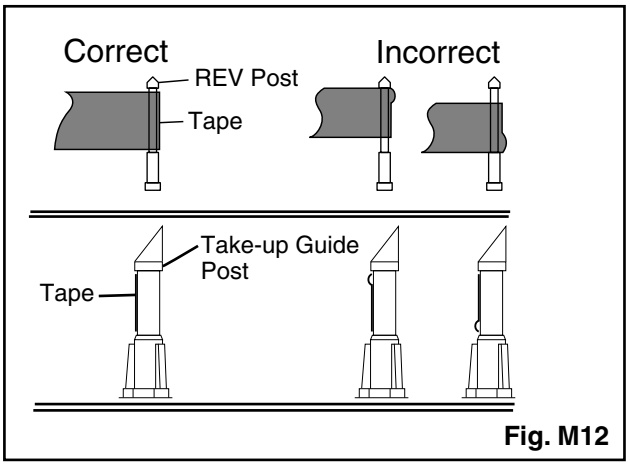


Fig. M12

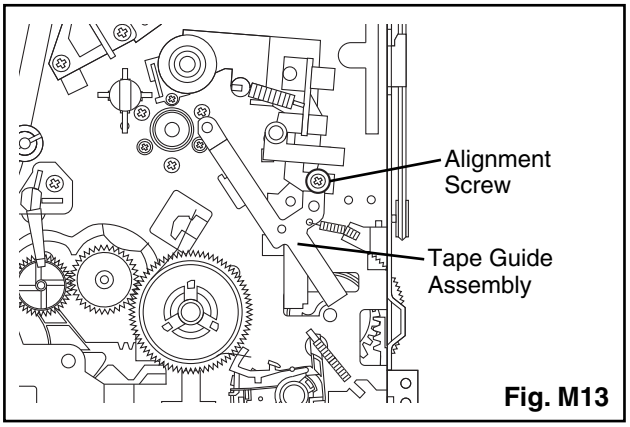


Fig. M13

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [44] and [45] in Fig. DM1H on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3H	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4H		
[3]	[2]	Slider (SP)	T	DM5H	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5H	*(L-2)	
[5]	[4]	Lock Lever	T	DM5H	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5H		
[7]	[7]	Cylinder Assembly	T	DM1H, DM6H	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1H, DM7H	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1H, DM7H	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1H, DM8H-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1H, DM8H-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1H, DM8H-1, DM8H-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1H, DM8H-1, DM8H-2		
[14]	[14]	FE Head	T	DM1H, DM9H	(S-5)	
[15]	[15]	Prism	T	DM1H, DM9H	(S-6)	
[16]	[2]	Slider Shaft	T	DM10H	*(L-5)	
[17]	[16]	C Drive Lever (SP)	T	DM10H		
[18]	[16]	C Drive Lever (TU)	T	DM10H	(S-7), *(P-4)	
[19]	[19]	Capstan Motor	B	DM2H, DM11H	3(S-8), Cap Belt	
[20]	[20]	Clutch Assembly (HI)	B	DM2H, DM12H	(C-1)	
[21]	[20]	Center Gear	B	DM12H		
*[22]	[22]	F Brake Assembly (HI)	B	DM2H, DM12H	*(L-6)	
[23]	[22]	Worm Holder	B	DM2H, DM13H-1	(S-9), *(L-7), *(L-8)	
[24]	[22]	Pulley Assembly (HI)	B	DM2H, DM13H-1		
[25]	[25]	Mode Gear (LM)	B	DM2H, DM13H-1	(C-2)	
[26]	[20],[25]	Mode Lever (HI)	B	DM2H, DM13H-1, DM13H-2	(C-3)	
[27]	[22],[23], [26]	Cam Gear (A) (HI)	B	DM2H, DM13H-1, DM13H-2	(C-4)	(+)Refer to Alignment Sec.Page 2-5-1
[28]	[26]	TR Gear C	B	DM2H, DM13H-1	(C-5)	
[29]	[28]	TR Gear Spring	B	DM13H-1		
[30]	[29]	TR Gear A/B	B	DM13H-1		
[31]	[31]	FF Arm (HI)	B	DM1H, DM14H		
[32]	[26]	Idler Assembly (HI)	B	DM1H, DM14H	*(L-9)	
[33]	[26]	BT Arm	B	DM2H, DM14H	*(P-5)	

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[34]	[26]	Loading Arm (SP) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[35]	[34]	Loading Arm (TU) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[36]	[16],[26]	M Brake (TU) Assembly (HI)	T	DM1H, DM15H		
[37]	[2],[26]	M Brake (SP) Assembly (HI)	T	DM1H, DM15H	*(P-6)	
[38]	[37]	Tension Lever Assembly	T	DM1H, DM15H		
[39]	[38]	T Lever Holder	T	DM15H	*(L-10)	
[40]	[40]	M Gear (HI)	T	DM1H, DM15H	(C-6)	
[41]	[15],[40]	Sensor Gear (HI)	T	DM1H, DM15H	(C-7)	
[42]	[36],[40]	Reel T	T	DM1H, DM15H		
[43]	[38]	Reel S	T	DM1H, DM15H		
[44]	[34],[38]	Moving Guide S Preparation	T	DM1H, DM16H	(S-11), Slide Plate	
[45]	[35]	Moving Guide T Preparation	T	DM1H, DM16H		
[46]	[19]	TG Post Assembly	T	DM1H, DM16H	*(L-11)	
[47]	[27]	Rack Assembly	R	DM17H		(+)Refer to Alignment Sec.Page 2-5-1
[48]	[47]	F Door Opener	R	DM17H		
[49]	[49]	Cleaner Assembly	T	DM1H, DM6H		
[50]	[49]	CL Post	T	DM6H	*(L-12)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

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*** [22] F Brake Assembly (HI) is not used in 2 head model.**

Top View

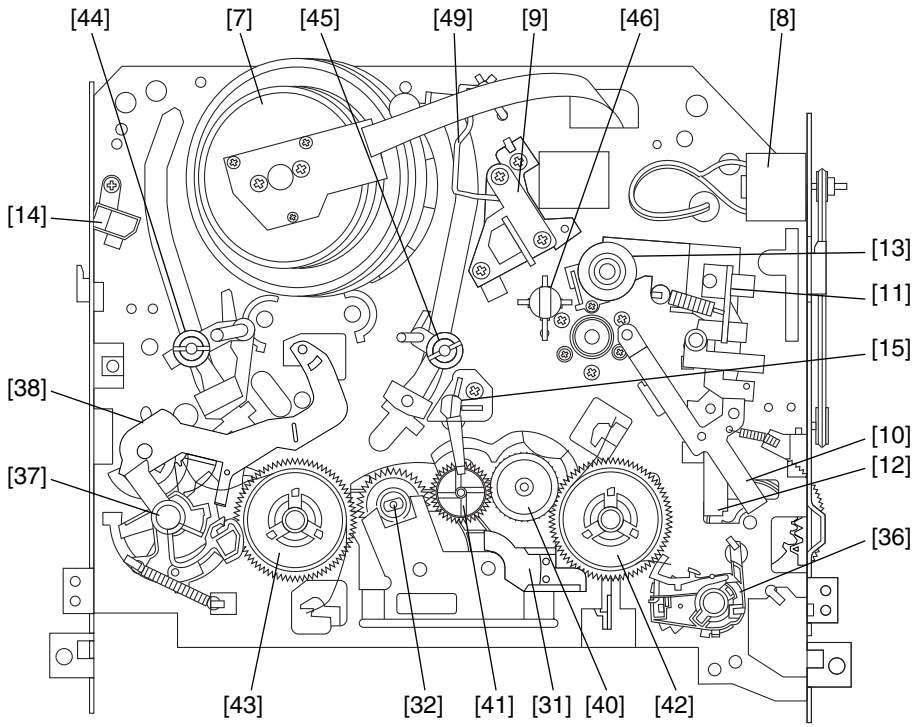


Fig. DM1H

Bottom View

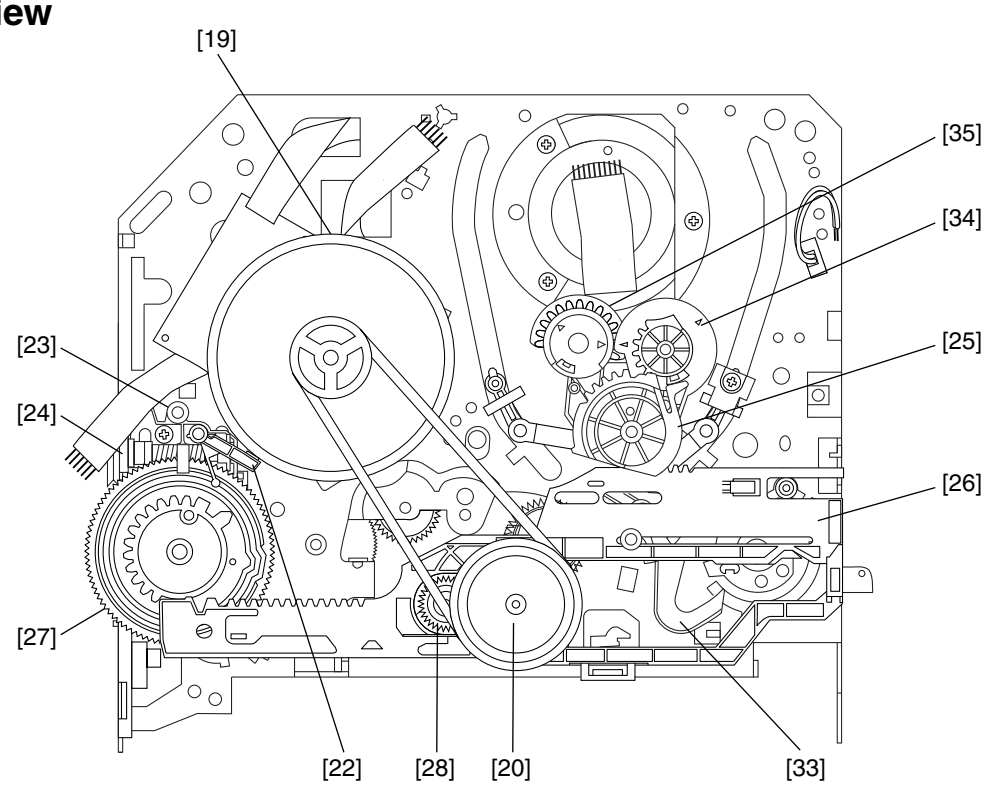


Fig. DM2H

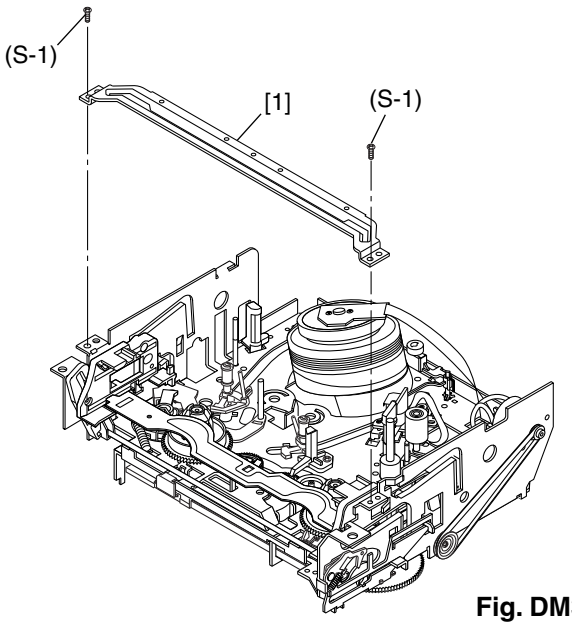
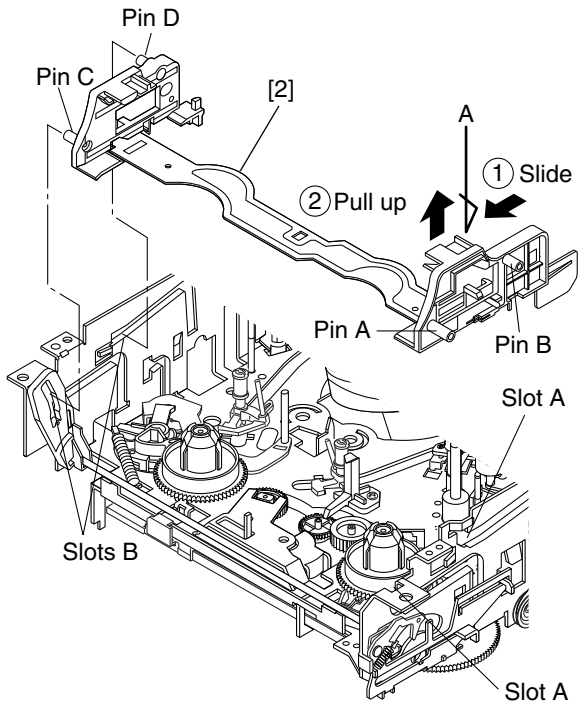


Fig. DM3H



First, while pushing the locking tab as shown in the right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

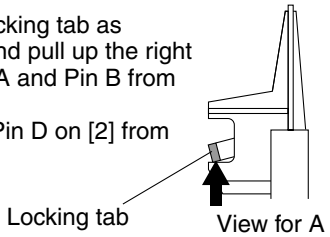
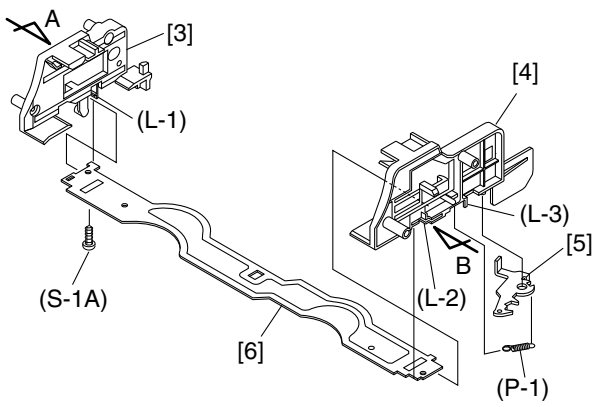
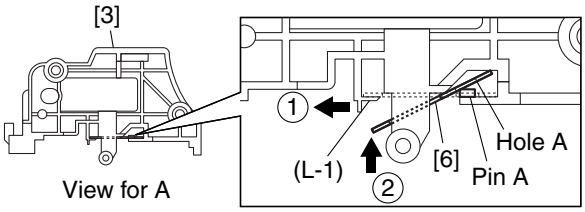


Fig. DM4H



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in the direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in the direction of arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

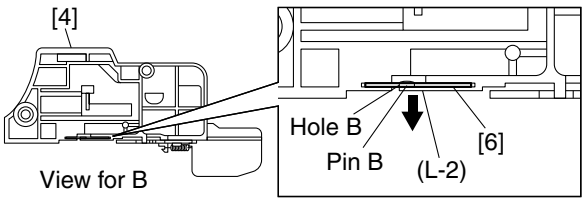


Fig. DM5H

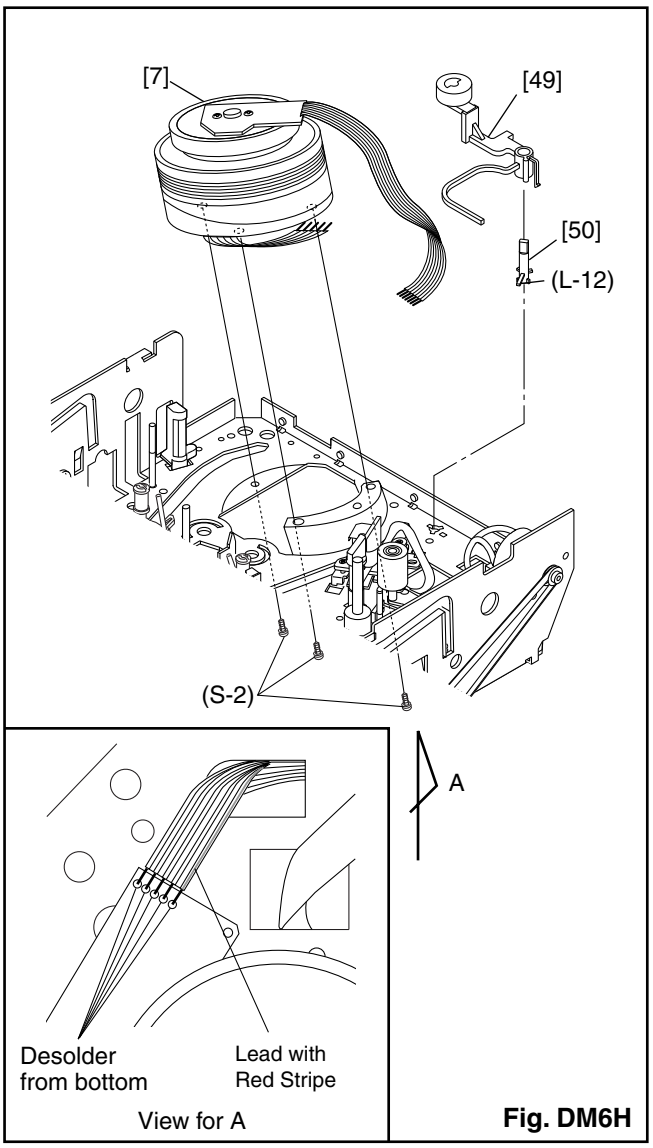


Fig. DM6H

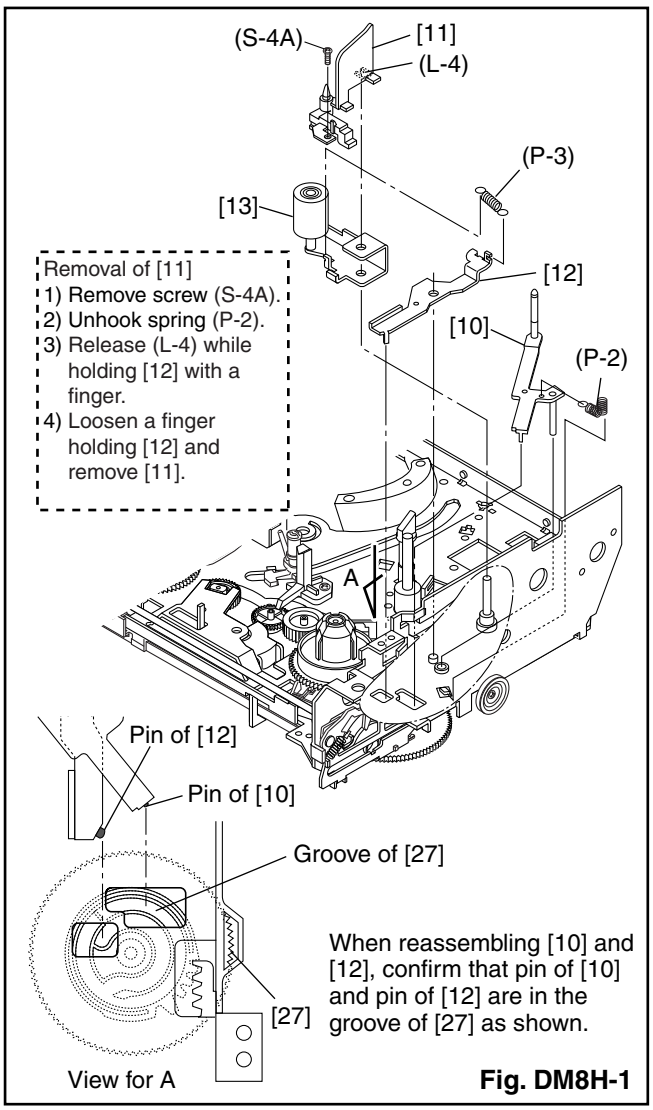


Fig. DM8H-1

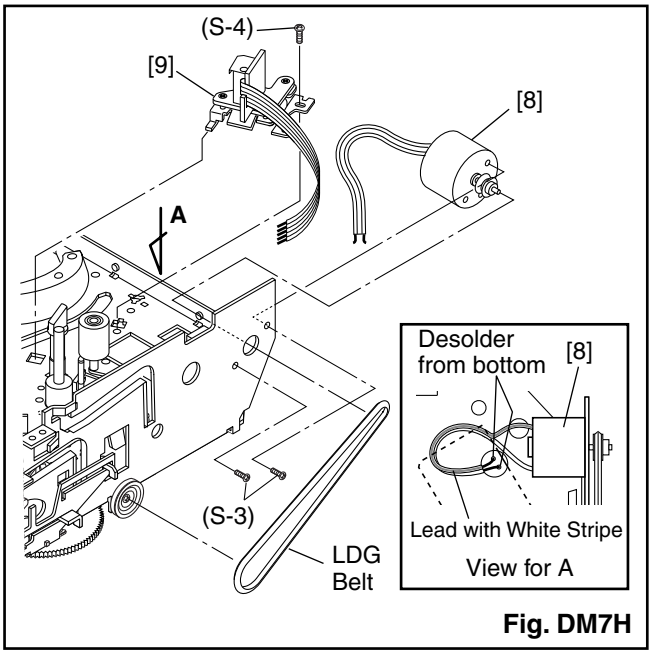


Fig. DM7H

Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install them to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

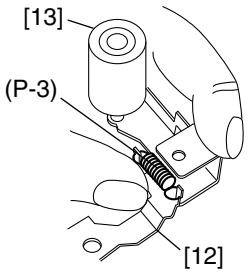


Fig. A

Install pin of [12] in groove of [27]. (Refer to Fig. B.)

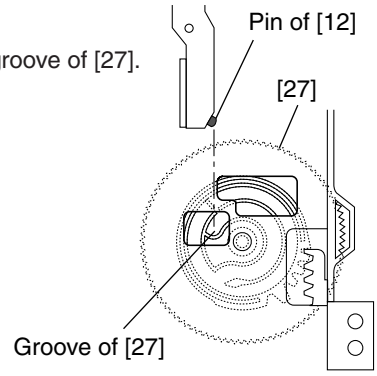


Fig. B (Top view)

Press both [12] and [13] till the groove of chassis pin appears, and adjust [13] to the notch of chassis. Then turn [13] a little in the direction of the arrow while pressing [12]. (Refer to Fig. C.)

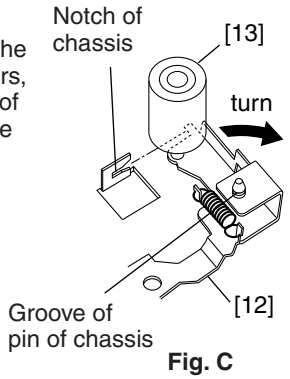


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8H-1.)

Fig. DM8H-2

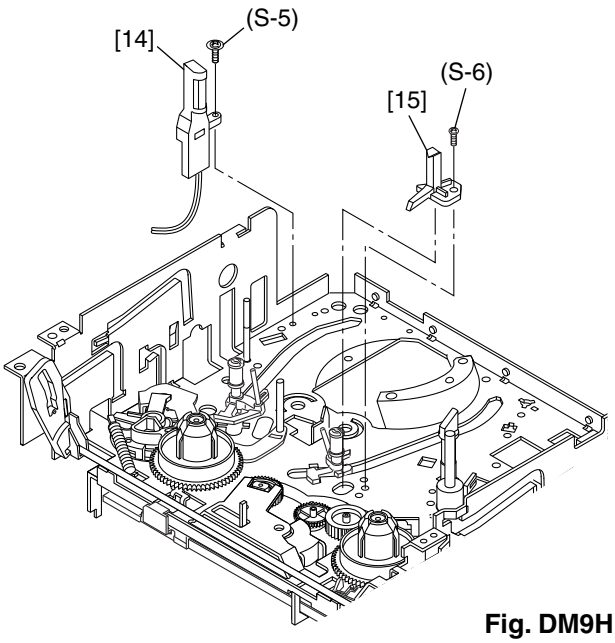


Fig. DM9H

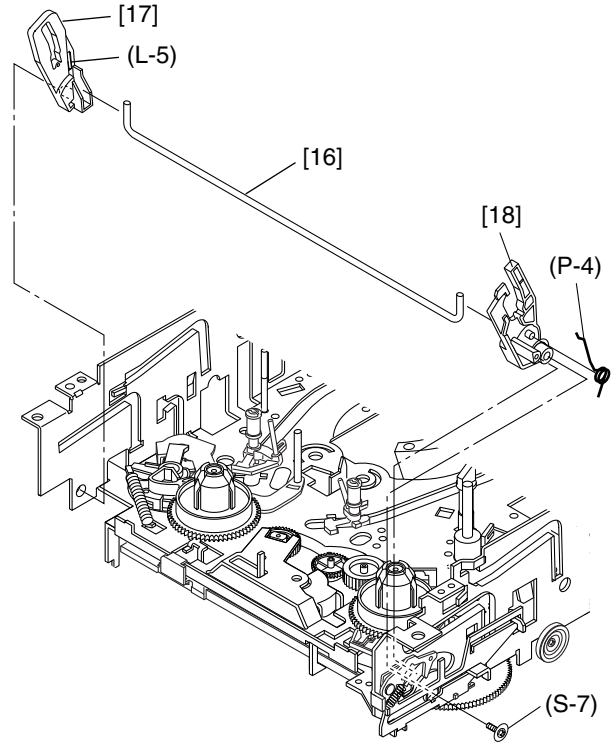
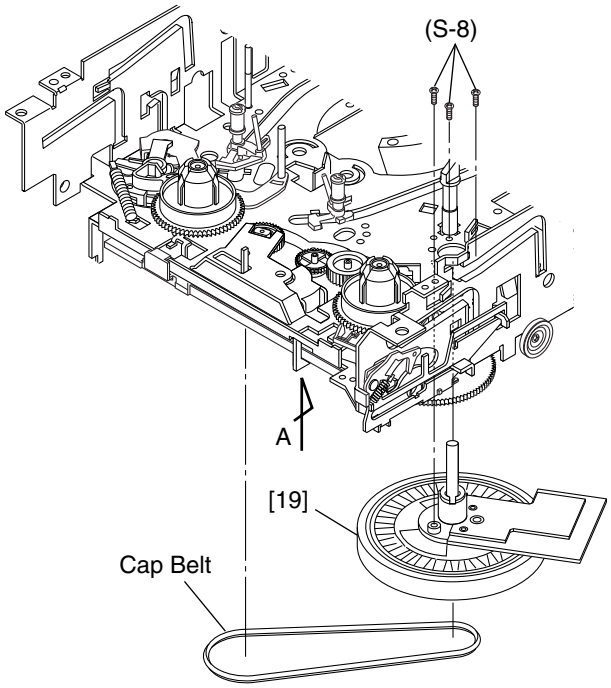


Fig. DM10H



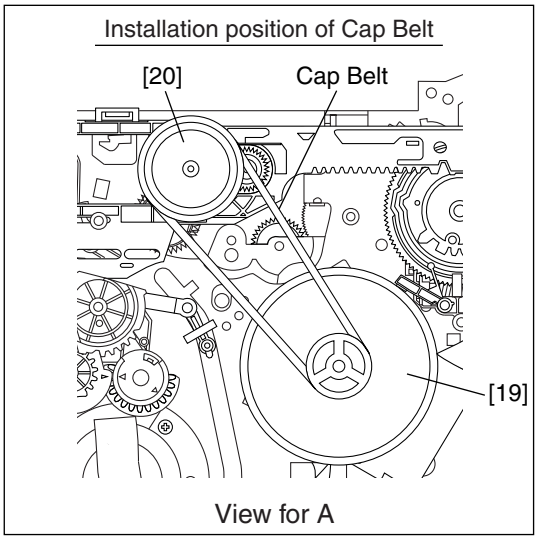
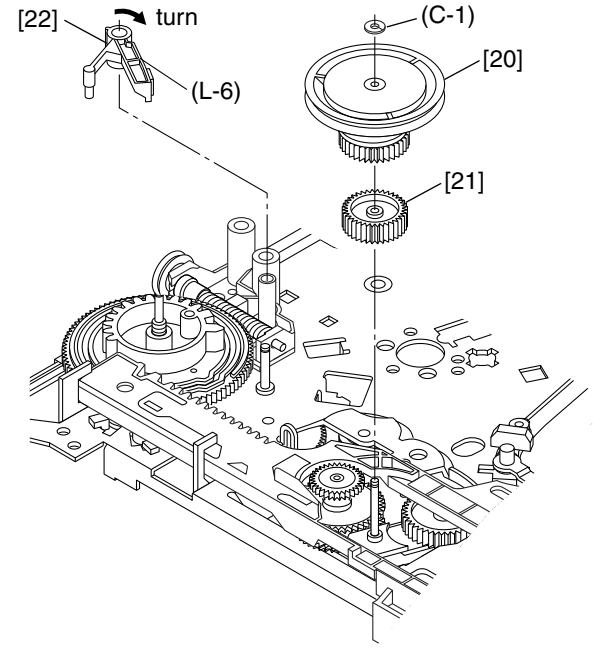


Fig. DM11H



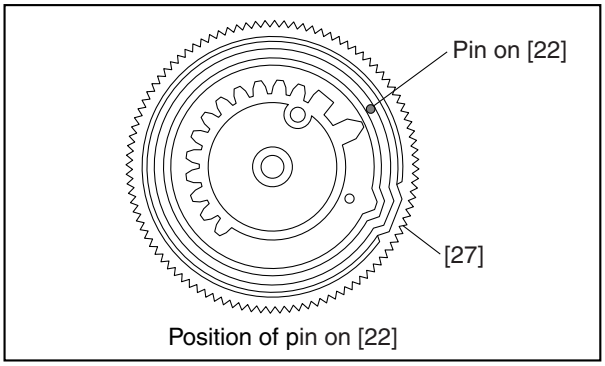


Fig. DM12H

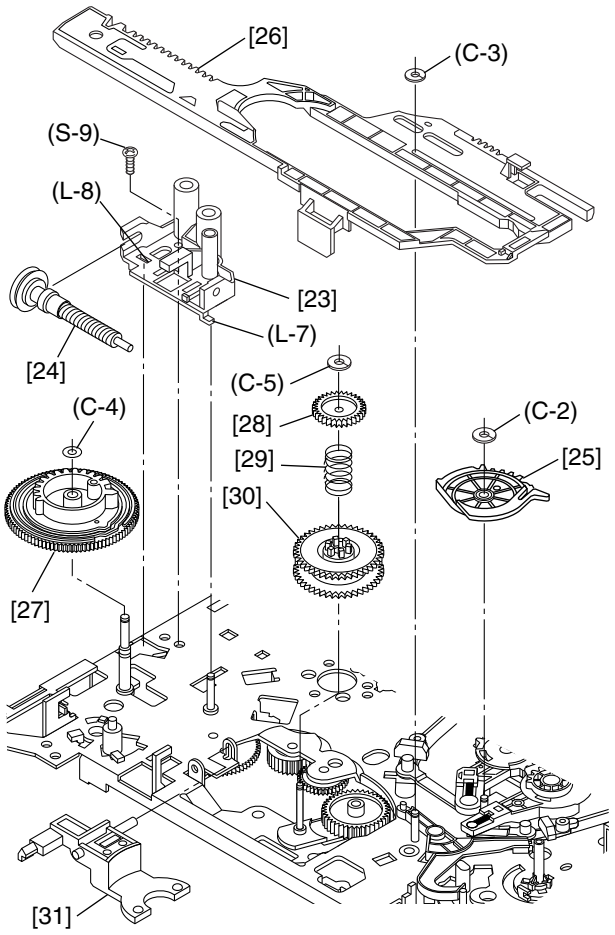
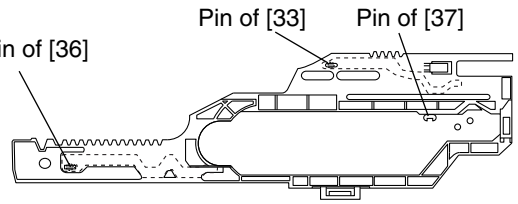
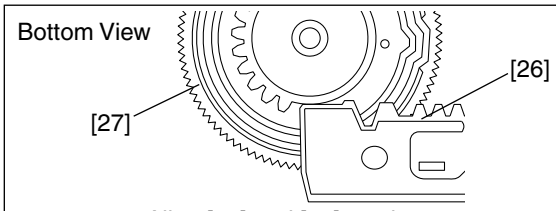


Fig. DM13H-1

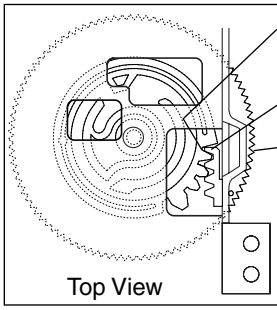
Installation of [26]

Position of Mode Lever when installed





Align [26] and [27] as shown.



When reassembling [27], meet the first groove on [27] to the first tooth on [47] as shown.

Fig. DM13H-2

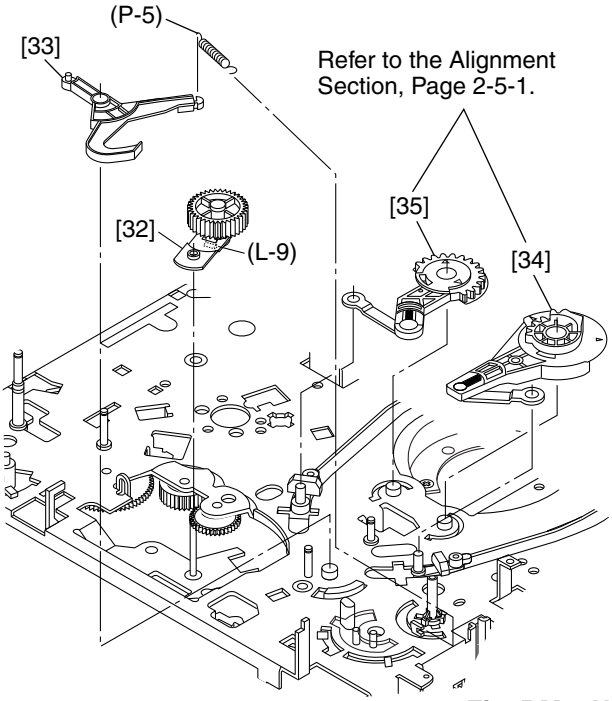


Fig. DM14H

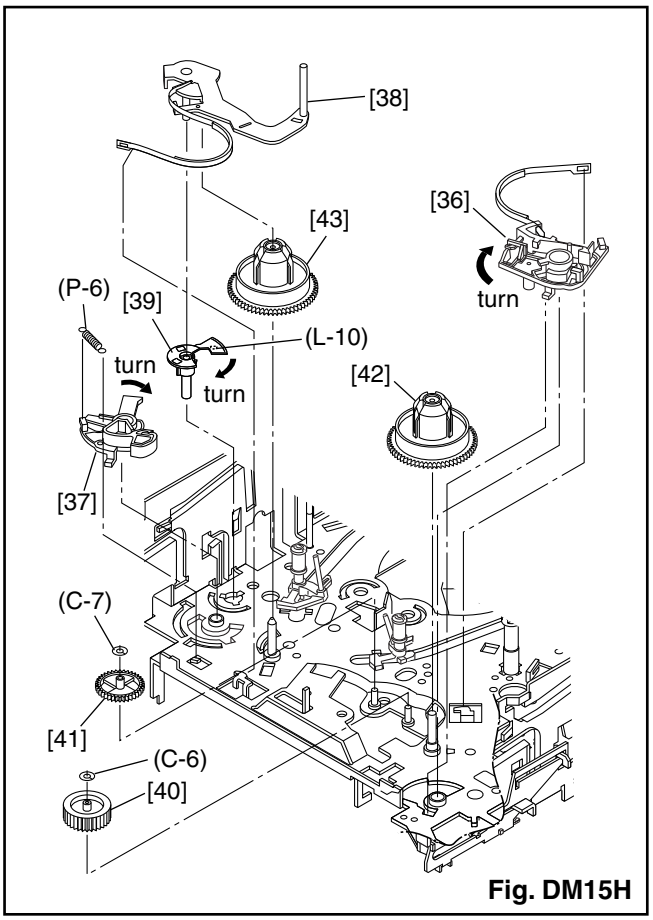


Fig. DM15H

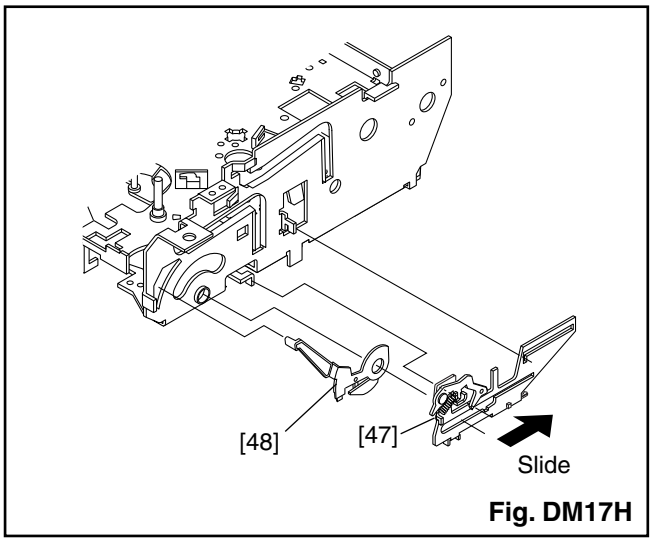


Fig. DM17H

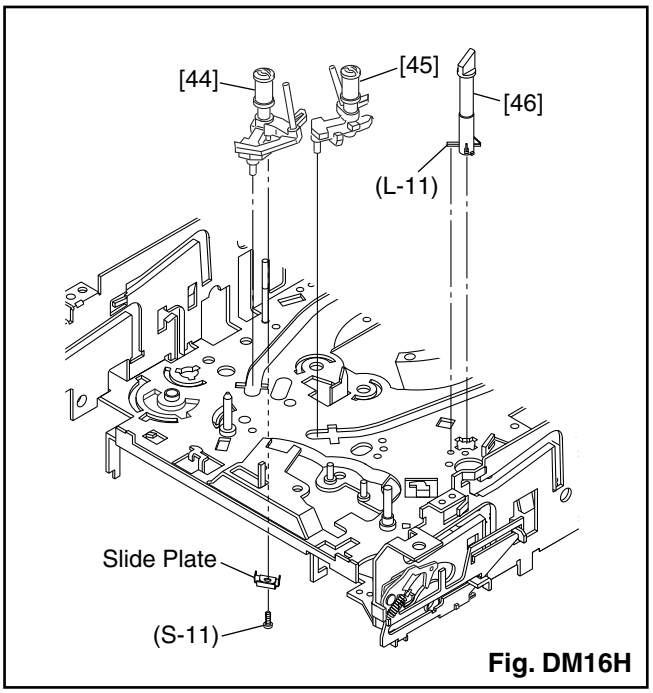


Fig. DM16H

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

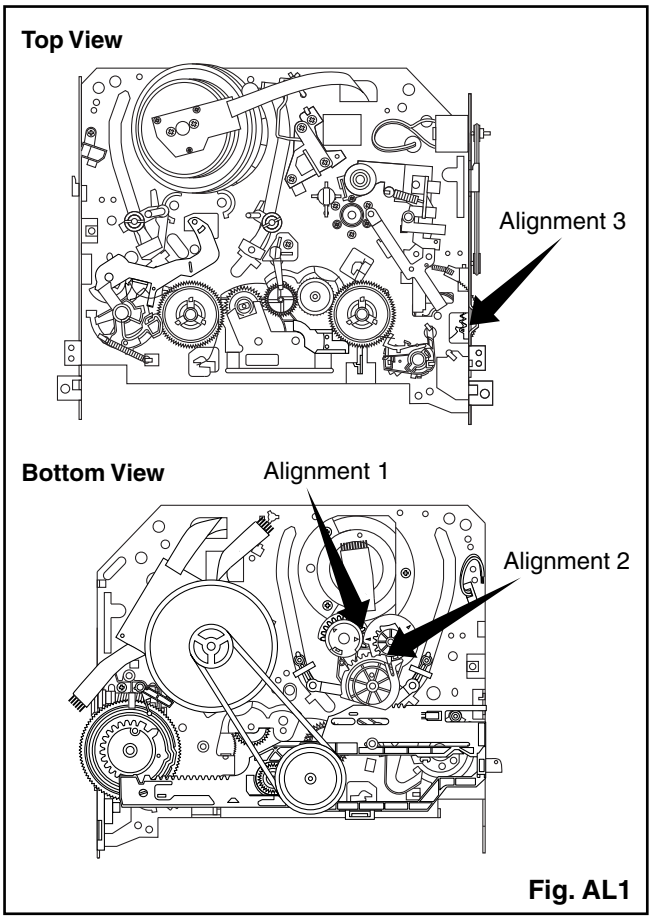


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

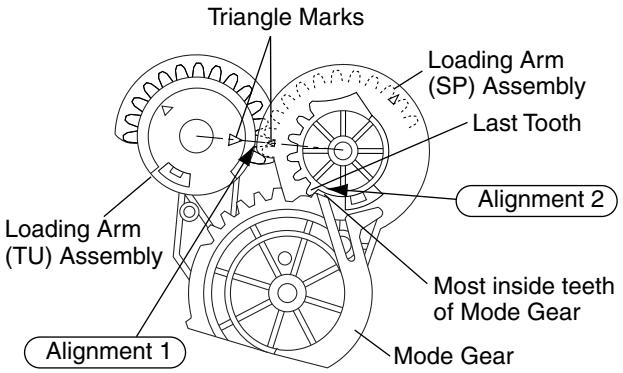


Fig. AL2

Alignment 3

Cam Gear (A) (HI), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) (HI) as shown in Fig. AL3.

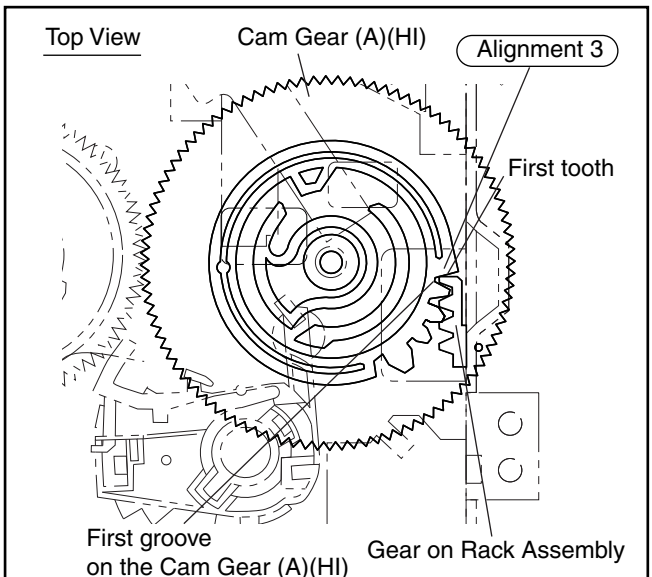
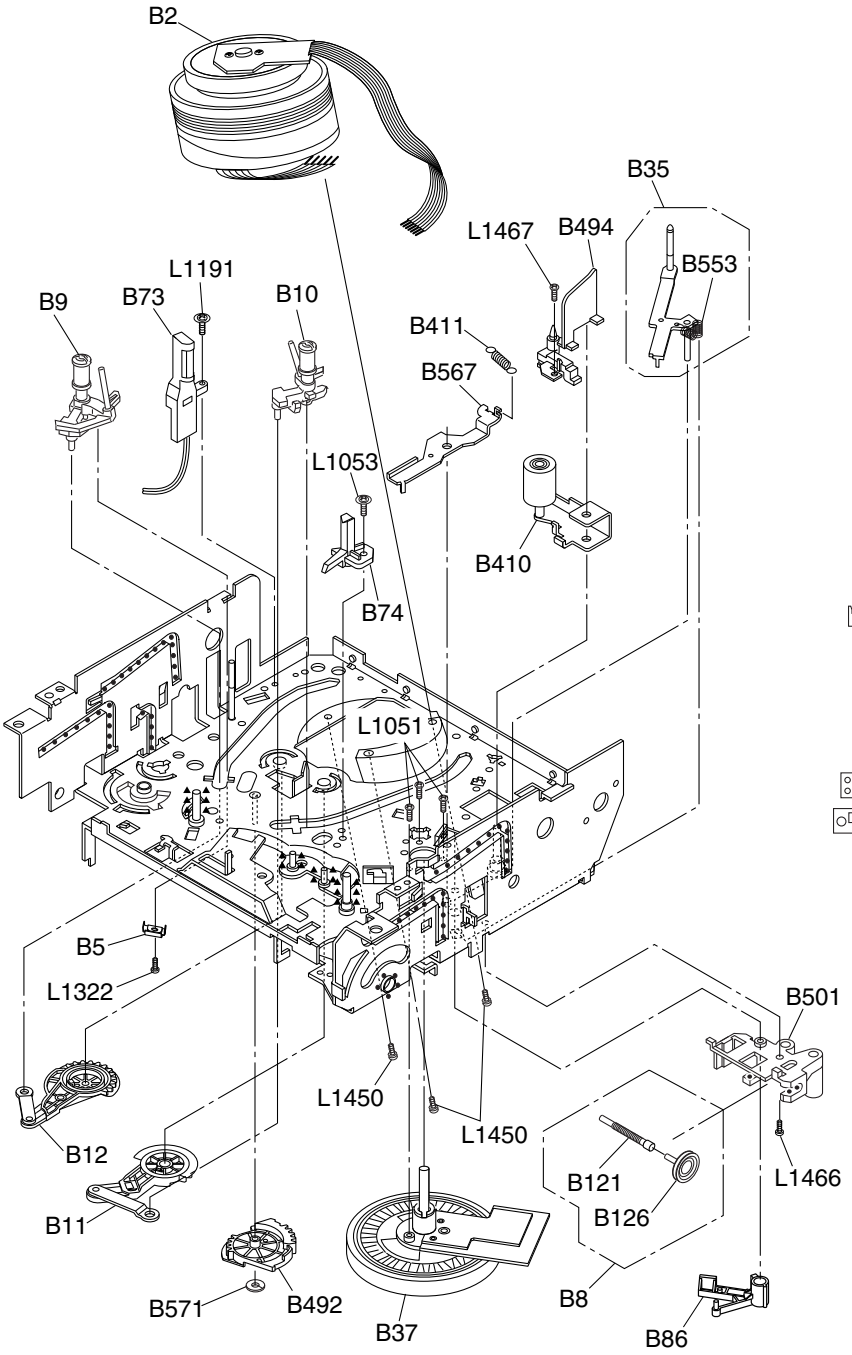


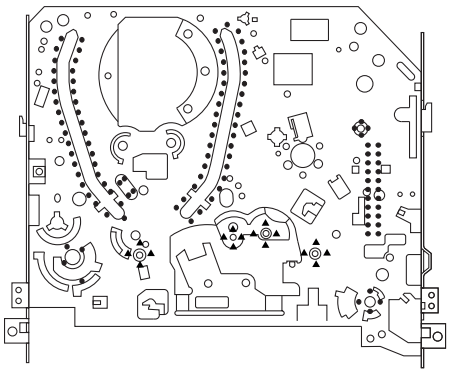
Fig. AL3

DECK EXPLODED VIEWS

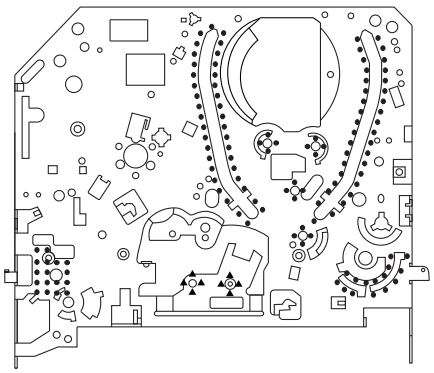
Deck Mechanism View 1

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





Chassis Assembly
Top View (Lubricating Point)

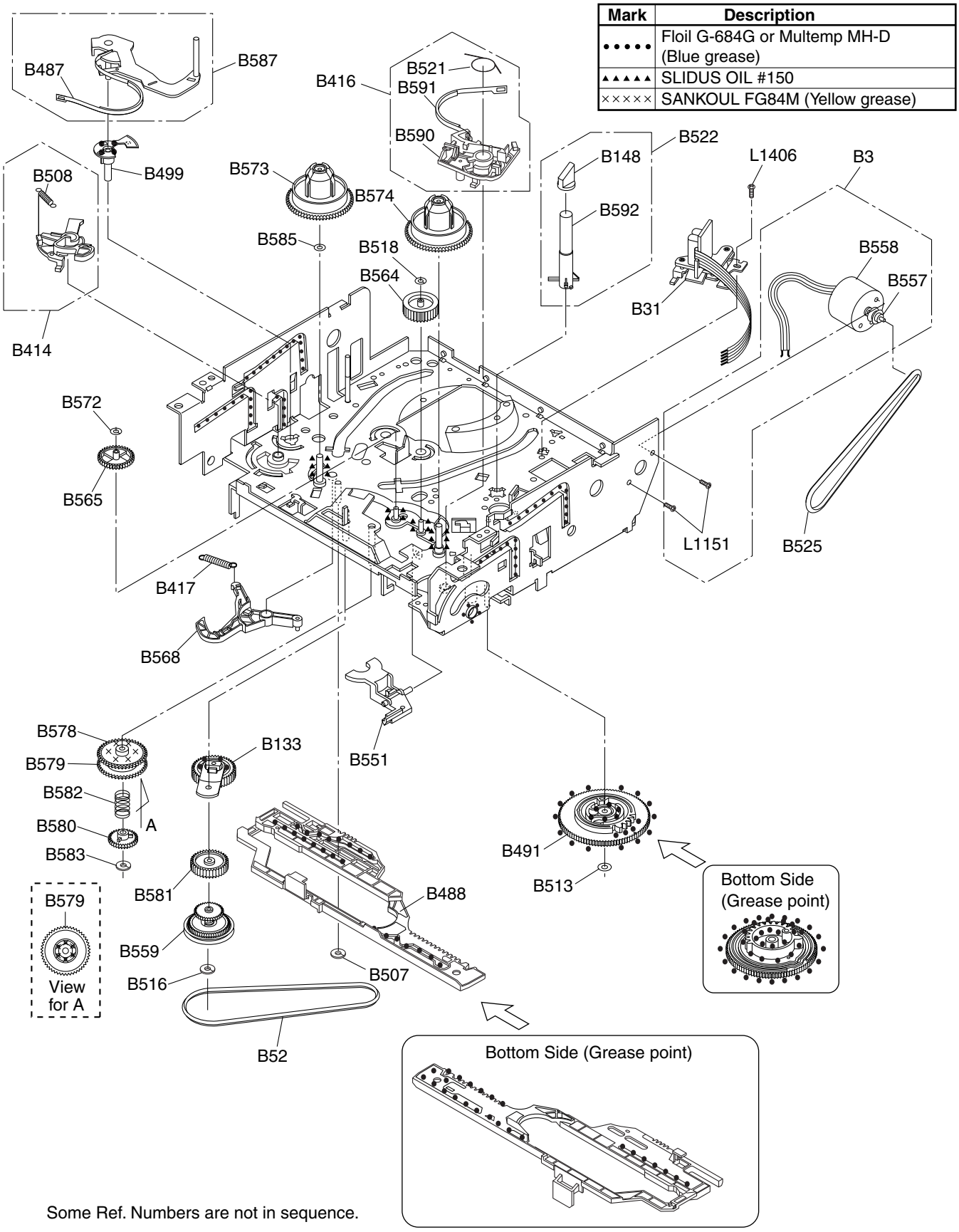


Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

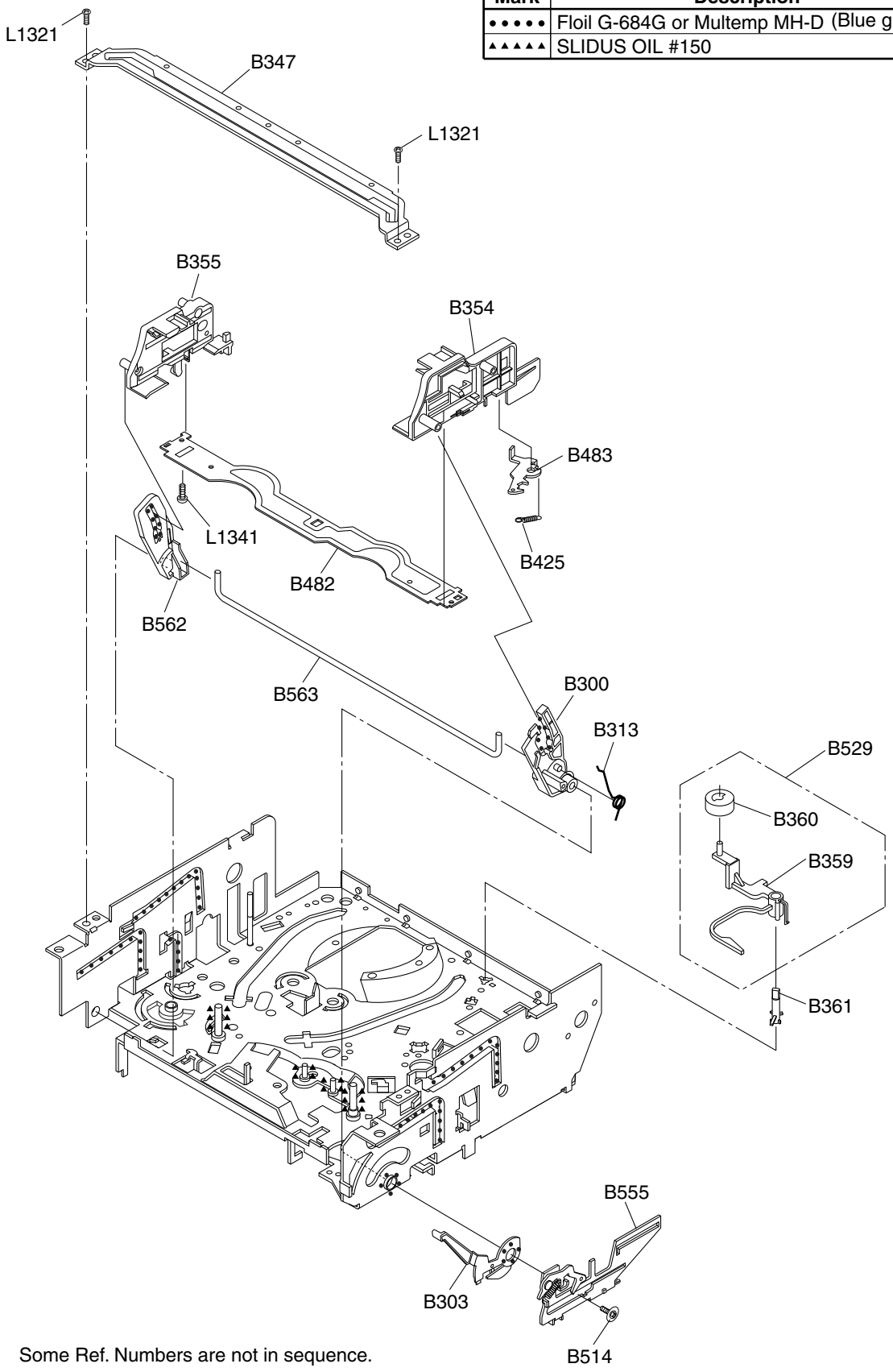
Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150
×××××	SANKOUL FG84M (Yellow grease)



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

DECK PARTS LIST

⚠	Location No.	TSB P/N	Reference No.	Description
	B2	P000468240	N236CCYL	CYLINDER ASSEMBLY MK12.5 PAL 6HD
	B3	P000468180	1VSA12912	LOADING MOTOR ASSEMBLY MK14
	B5	P000467990	0VM416429	SLIDE PLATE MK12.5
	B8		0VSA13501	PULLEY ASSEMBLY(HI) MK12
	B9	P000468130	1VSA12887	MOVING GUIDE S P.P MK12.5
	B10	P000468120	1VSA12886	MOVING GUIDE T P.P MK12.5
	B11	P000468100	1VSA12880	LOADING ARM(TU) ASSEMBLY MK12
	B12	P000468090	1VSA12879	LOADING ARM(SP) ASSEMBLY MK12
	B31	P000468140	1VSA12888	AC HEAD ASSEMBLY MK12.5
	B35	P000468150	1VSA12889	TAPE GUIDE ARM ASSEMBLY MK12.5
	B37	P000468250	N9688CML	CAPSTAN MOTOR HI 288/ VCZC1301
	B52	P000467850	0VM411138	CAP BELT MK10
	B73	P000468190	DHVEC01AL007	FE HEAD(MK12) HVFHP0047A
	B74	P000467540	0VM202870	PRISM MK10
	B86	P000468010	0VSA13447	F BRAKE ASSEMBLY(HI) MK12
	B121	P000467900	0VM414091	WORM MK12
	B126	P000467940	0VM414330B	PULLEY MK12
	B133	P000468170	1VSA12903	IDLER ASSEMBLY(HI) MK12
	B148	P000467780	0VM407664C	TG CAP MK6
	B300	P000467610	0VM203773	C DRIVE LEVER(TU) MK12
	B303	P000467570	0VM203751C	F DOOR OPENER MK12
	B313	P000467920	0VM414145	C DRIVE SPRING MK12
	B347	P000467650	0VM304920	GUIDE HOLDER A MK10
	B354	P000467500	0VM101172F	SLIDER(TU) MK12
	B355	P000467520	0VM101182K	SLIDER(SP) MK12
	B359	P000467630	0VM304413	CLEANER LEVER MK10
	B360	P000467800	0VM410032C	CLEANER ROLLER MK9
	B361	P000467840	0VM411114	CL POST MK10
	B410	P000468110	1VSA12881	PINCH ARM(A) ASSEMBLY(5) MK12
	B411	P000467950	0VM414644	PINCH SPRING MK12
	B414	P000468030	0VSA13655	M BRAKE(SP) ASSEMBLY(HI) MK12
	B416		0VSA13449	M BRAKE(TU) ASSEMBLY(HI) MK12
	B417	P000467930	0VM414221G	TENSION SPG(3002645) MK12.5
	B425	P000467830	0VM411110	LOCK LEVER SPRING MK10
	B482	P000468040	1VM220271	CASSETTE PLATE
	B483	P000467910	0VM414095	LOCK LEVER MK12
	B487	P000468050	1VM320582	BAND BRAKE(SP) MK12.5
	B488	P000467530	0VM101352	MODE LEVER(HI) MK12.5
	B491	P000467510	0VM101176G	CAM GEAR(A)(HI) MK12
	B492	P000467620	0VM204236	MODE GEAR(LM) MK12
	B494	P000467670	0VM305719	C DOOR OPENER MK12
	B499	P000467700	0VM305729C	T LEVER HOLDER MK12
	B501	P000467590	0VM203767	WORM HOLDER MK12
	B507	P000467810	0VM410058	REEL WASHER MK9 5*2.1*0.5
	B508	P000467970	0VM414899	S BRAKE SPRING(HI) MK12
	B513	P000467770	0VM402629A	P.S.W F 6*2.55*0.5
	B514		0VM411535B	SCREW RACK MK14
	B516	P000467810	0VM410058	REEL WASHER MK9 5*2.1*0.5
	B518	P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B521	P000467980	0VM414943	REV BRAKE SPG(HI) MK12
	B522		0VSA11012	TG POST ASSEMBLY MK10
	B525	P000467880	0VM412804	LDG BELT MK11
	B529		0VSA11161	CLEANER ASSEMBLY MK10
	B551	P000467760	0VM306183	FF ARM(HI) MK12
	B553	P000467870	0VM412555	REV SPRING MK11
	B555	P000468070	1VSA11842	RACK ASSEMBLY MK14
	B557		0VM403205A	MOTOR PULLEY U5
	B558		MMDZB12MF003	LOADING MOTOR RF-500TB-12560
	B559	P000468020	0VSA13450	CLUTCH ASSEMBLY(HI) MK12
	B562	P000467600	0VM203772	C DRIVE LEVER(SP) MK12
	B563	P000467740	0VM305762B	SLIDER SHAFT MK12
	B564	P000467720	0VM305755	M GEAR(HI) MK12
	B565	P000467730	0VM305756	SENSOR GEAR(HI) MK12
	B567	P000468160	1VSA12890	PINCHI ARM(B) ASSEMBLY MK12.5
	B568	P000467690	0VM305728	BT ARM MK12
	B571	P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B572	P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B573	P000467560	0VM203436	REEL S MK11
	B574	P000467550	0VM202872C	REEL T MK10
	B578	P000467640	0VM304440	TR GEAR A MK10
	B579	P000467750	0VM305900	TR GEAR B MK12
	B580	P000467710	0VM305743A	TR GEAR C MK12
	B581	P000467660	0VM305081	CENTER GEAR MK11
	B582	P000467860	0VM411187C	TR GEAR SPRING MK10
	B583	P000467960	0VM414741	CAM WASHER MK12
	B585	P000467890	0VM413663	PSW(317505) MK11
	B587	P000468080	1VSA12878	TENSION LEVER ASSEMBLY MK12
	B590	P000467580	0VM203752E	BRAKE ARM(TU) MK12
	B591	P000467680	0VM305724C	BAND BRAKE(TU) MK12
	B592	P000467820	0VM411108E	TG POST MK10
	L1051		GPJB9060	SCREW B-TIGHT M2.6X6 PAN HEAD+
	L1053		GCJS9080	SCREW S-TIGHT M2.6X8 WASHER HEAD+
	L1151		CPJ39040	SCREW SEMS M2.6X4 PAN HEAD+
	L1191		GCJS9080	SCREW S-TIGHT M2.6X8 WASHER HEAD+
	L1321		GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	L1322		GBJBY040	SCREW B-TIGHT M2.3X4 BIND HEAD+
	L1341		GPJP2060	SCREW P-TIGHT M2X6 PAN HEAD+
	L1406		0VM410964A	AC HEAD SCREW MK14
	L1450		CPJ39050	SCREW SEMS M2.6X5 PAN HEAD+
	L1466		GBJS9060	SCREW S-TIGHT M2.6X6 BIND HEAD+
	L1467		SCJ39050	SCREW M2.6X5 WASHER HEAD+

TOSHIBA CORPORATION
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Appendix: D-VR16SB, D-VR40SF

REVISION HISTORY

REV	Date	Reason for Change
1	07/30/07	Changed Parts List due to correct TSB P/N, Reference No, and Description for LED, Location No. D555